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Design for Timber Spire.—By Mr. Walter Percival.....*Double-Page Ink-Photo.*
Wilson's Grammar School, Camberwell.—Mr. E. R. Robson, F.R.I.B.A., Architect .....*Single-Page Photo-Litho.*
Clock Tower of the People's Palace, Mile End, London.—Mr. E. R. Robson, F.R.I.B.A., Architect .....*Single-Page Photo-Litho.*

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The Catalogue of the Spitzer Collection.

WE know not whether those of our readers who are not professedly collectors on a large and sumptuous scale—few architects enjoy the requisite wealth for the pursuit, however congenial it might be to them otherwise—have fully realised what an extraordinary and almost unheard-of sale of *objets d'art* is that which is to be prosecuted at No. 33, Rue de Villejust, Paris, during the period between April 17 and June 16 of this year. The sale is a phenomenal one, and the catalogue is no less phenomenal. It consists of two large and handsome folio volumes of letterpress, containing a short description, date and other information appended to the number of every article in the sale, and a still larger folio of plates of photographs of many hundreds of the objects in the collection. The sumptuous character of the catalogue, which in itself is, along with the illustrations, a record worth preservation in a library, is however only in keeping with the abnormal value of the collection, which in the present days of æsthetic indulgence, must probably be reckoned in millions rather than thousands.

To many of that large majority of mankind who are not rich enough to concern themselves with the traffic in rare and valuable works of art the Paris Exhibition of 1889 gave the first hint as to the extraordinary character of the Spitzer collection, when they found nearly all the most valuable Mediæval work in the Trocadéro Exhibition labelled "Collection Spitzer." The author or maker of this collection appears himself to have had a phenomenal career. He inherited no wealth. He was born at Vienna in 1815, with his own way to make in the world, but apparently with an inherent perception in regard to the merits and the commercial value of examples of ancient industrial art, especially of Mediæval and Renaissance work. He appears to have combined æsthetic perception with business capacity so thoroughly that he was able to make his traffic in works of art itself the means of building up the fortune which enabled him ultimately to leave the greatest collection of the century. He commensed life by touring through Germany, England, Belgium, and Holland, in the pursuit of the trade of a *curio* dealer, making money and perfecting his information at the same time. In 1852, at the age of 37, he settled in Paris, at an epoch peculiarly favourable for his ambition. Paris was then the central depôt of Europe for the curious in works of art, and the modern world was just then awaking to the fact that there are some other classes of artistic objects worth attention besides pictures and sculpture. In short, like Stephenson in the business of railway-making and Scott in that of church building and church restoration, Spitzer had the good fortune to come in at the right moment to make the best of a new taste, and make his fortune out of it. But he aspired to be something more than the leading dealer in works of art; he had the ambition to organise by his own single effort a complete museum of industrial art of the Mediæval and Renaissance schools. He appears to have pursued this object with an inflexible perseverance, purchasing and putting aside from the collections which passed through his hands the finest examples of each class of work, until he had slowly amassed the collection of *chef d'œuvres* which is now unhappily to be dispersed again by public sale only two or three years after its completion. One cannot help thinking that both Balzac and Spitzer were mutual losers by the great collector having lived too late to come under the notice of the great novelist. Had it been otherwise, Spitzer and his collection would have been immortalised in literature under some transparent pseudonym, and Balzac would have had a suggestion for an *étude* after his own heart.

The first section of the illustrations to the catalogue gives a small number of peculiarly interesting Greek terra-cotta groups. These are mostly not single figures, like the well-known Tanagra examples, but sculptural groups on a small scale, some of them very remarkable both as compositions and for their force of dramatic expression. It is unfortunate that nothing is said in the catalogue as to their place of discovery, of which, however, their collector could perhaps have given no reliable information had he been living. Students of Greek art, however, will find them of no little interest.

Among a small collection of various objects in bronze which follow, is a remarkable bronze vessel of Roman work found at Palestrina, a circular vessel standing on three claws, and engraved with figures and quasi-Greek ornament in incised work, with a lid of which the handle is formed (in true Roman taste) by a nude figure bent backwards, and attached to the lid by the feet and hands. The collection of ivories which forms the next group is a truly remarkable one in its illustrations of Byzantine and early Gothic work of this class. Coffers, triptyches and diptyches with figure subjects in relief, carved horns, and single figures, are among this part of the collection. One remarkably rich coffer, showing figures in low relief in panels divided by bands of ornament, which has a very Byzantine appearance, is stated to be Italian work of the tenth century and in that sense has considerable interest as showing the surviving influence of Byzantine feeling in Italy at that date. The ivories include also some fine examples of French and Italian work of the Renaissance period.

The section of "Orfèvrerie Réligieuse" includes nearly two hundred pieces of great interest and value. Prominent among these is a magnificent reliquary and monstrance combined, about 4 ft. high, described as "Hispano-Flamand" work of the fifteenth century, probably Flemish work under Spanish influence. A tabernacle of Venetian work of the sixteenth century offers an interesting comparison with this, as an object of somewhat the same nature designed in Renaissance form; it has more refinement

of detail and taste, but certainly far less power and richness of effect. An object with the foot and stem designed in the usual Gothic form for large chalices finishes above as a dish (set at an oblique angle) with the head of John the Baptist powerfully modelled in high relief, copper silvered and gilt; German work of the fifteenth century. Processional crosses, coffers, and monstrances are numerous. Among the coffers is a remarkably interesting piece of Limoges work of the thirteenth century. A processional cross of Spanish work of the fifteenth century, about 7 ft. in total height, is a splendid work, especially in the treatment of the extremities of the cross, in large plaques of blue enamel, on which rich leafage is fixed, cut out in engraved metal.

Tapestries are not very numerous, but include some very fine examples. Among these is the collection of eight mostly small but very elaborately-designed tapestries, illustrating the history of the miraculous image of Notre Dame de Sablon, made in 1518 at Brussells, by order of François de Taxis, "Maître des Postes de l'Empire." They are specially remarkable for the minute and elaborate character of their architectural backgrounds. An Italian tapestry of the Annunciation (fifteenth century) and a German one of the Repose in Egypt (same period) are also very fine pieces of tapestry design.

The collection of Limoges enamels includes nearly 200 examples, prominent among which is a splendid work of Leonard Limosin, with a copy of Raphael's Neptune ("Quos ego") in the large centre panel, and mythological subjects connected with the Æneid on smaller panels surrounding it. An oval plaque by Pierre Reymond (1563), Abraham refusing the presents of the King of Sodom, with a very fine border of grotesques, is another remarkable piece.

Palissy ware, of which there is a representative collection, hardly holds its old place now in artistic estimation, though it is still valuable from a collector's point of view. Some of the pieces here show Palissy at his best, especially some few in which the design consists of decorative patterns only, and which are very effective owing to the richness of surface obtained in this class of ware. But in general Palissy was too much occupied with mere clever imitations of nature, and in a general way it may be said that where his imitation is most successful, in a realistic sense, his design is worst, in fact can often hardly be called design at all.

Furniture comes next in the collection; but though there are a good many fine and varied examples, there is nothing superior, perhaps nothing equal, to the best work to be found in the South Kensington Museum. The collection of stamped leather contains some very fine work, as also the collection of metal work and keys, but nothing better than what we may see in well-known collections. The collection of "Dinanderie," *i.e.*, metal ware in the shape of more or less grotesque cups and vessels, for which Dinant was famous in the early Mediæval period,* furnishes illustrations of a kind of work which, ugly as it mostly is, has a historical interest.

Of Oriental faïence the collection is but small, but there is a splendid show of Italian Renaissance faïence, a class of work to which Spitzer attached great value. The remarkable point about Italian Renaissance design of this class is that it seems to combine a great deal of Oriental richness in general design and effect, with the refinement of detail and the good drawing of the figure which were characteristic of the art of the Renaissance. This combination of richness with elegance is finely exemplified in the three plates by Orazia Fontana, numbered 1089 to 1091 in catalogue. In these the general lines of the design show a freedom from the influence of conventional symmetry which is not frequently found in Renaissance work, while the details and pictorial subjects have the full Renaissance refinement and finish. A plate representing the death of Cæsar, and attributed to Nicolo d'Urbino (number 1073 in the catalogue) is remarkable not only for the spirit of the figures and composition, but for the curiously bold way in which the lines of the pilasters and piers of the architectural background are drawn straight up on to the rim of the plate, ignoring the break in the ground between the rim and the centre. The effect is not good, it is only interesting as showing the purely pictorial spirit in which the artist treated his work, regarding the surface of the plate merely as so much space to draw on, and entirely ignoring the functional distinction between the central space and the raised rim. A similar treatment often occurs and is shown in other examples in this collection, but it is more noticeable where the background is formed of architecture which necessarily suffers distortion of its lines by such a treatment. A contrary method is shown in a curious plate attributed to the same artist, in which the pictorial subject is entirely confined to the rim (an unusually wide one), and the centre left plain, except for a coat-of-arms.

The collection of marbles includes a superb monument attributed to Antonio Lombardi, containing three large alto-relief panels, and a number of smaller subjects and ornaments in bas-relief, of the highest class of Renaissance work in regard to design and execution.

The remaining departments of the Spitzer collection include medals and coins, bronzes, and earthenwares, after which we come to "Orfèvrerie Civile," which contains a number of exquisite examples of Renaissance silversmith's work, some of them of very unusual fancy in design and idea. Next comes jewellery, stained glass (not a large collection, but containing some very valuable examples), glass (a very good collection), carvings in boxwood, cutlery, wax modelling, work in precious stones, clocks, watches, mathematical instruments, and embroidery and textiles. This last department contains some splendid work, in particular an altar frontal (No. 3,085) of Italian work of the seventeenth century, and another (No. 3,083) of Spanish work of the sixteenth century; this latter is a splendid bit of decorative design.

It is melancholy to think of such a phenomenal collection as this, the work of so many years, being all dispersed again. It might have been hoped that the French Government, with its well-known interest in the encouragement of art, might have made an effort to secure the collection, as it stands, for the nation, as French statesman are not haunted by that demon of economy which interferes whenever any large expenditure on art is suggested in our own Parliament. The cost would be great, but what one man could manage to collect out of his private resources it might be supposed that the State could manage to purchase. We hope, at all events, that the various departments of the great collection may as far as possible be purchased *en bloc*, so as not to lose their collective value, and so as to be available for public inspection and study afterwards, either in France or in some other country.

* Taylor alludes to this in "Philip van Artevelde," where the spy who comes to Ypres in the interests of the French Court is advised to say he is a trader in this ware:—

"Say you come from Dinand;
From Dinard, say, to sell Dinandery,
Pots, pitchers, mugs and beakers, and the like."

SCHOOL OF CARVING, ABERGAVENNY.—We have received the prospectus of a new school of wood carving which has been opened at Abergavenny, under the management of Mr. J. J. Spencer, architect of that town, Mr. J. E. Powell being the practical instructor in carving. The school has been opened with the object of encouraging the art of wood and stone carving in the town and neighbourhood of Abergavenny. The school is prepared to execute orders for carved work to be carried out by the students, who will receive a commission on any of their work that is sold. It is to be hoped that the experiment will prove a success.

RAILWAY RATES.

THIS question has frequently been attacked, with more or less success, by each of the great political parties; but the result, so far, only goes to confirm Professor Jeans' opinion that it is a difficulty which will always be present with us. The fact that several hours were recently devoted to a discussion on the present aspect of the question, in a session crowded with other business of, perhaps, more political interest, if of less practical importance, affords sufficient proof of the estimate in which it is just now held by the House of Commons.

The present difficulty has undoubtedly arisen from mistaken action on the part of the companies. This was partially admitted by Sir Julian Goldsmid (who is on the Board of the London and Brighton Railway) in the course of the debate on the 3rd inst.; the mistake consisting, in his opinion, in neglecting to publish, sooner than they did, a notice of their intention not to retain the maximum rates. That much of the alarm and annoyance occasioned by the sweeping nature of the changes made last January might have been avoided, is undeniable. There was absolutely no hint whatever that the revised rates then announced were of a temporary nature. Rightly or wrongly, the public are inclined to think that no notification of an intention to abandon or modify them would have been forthcoming at all, but for the persistence and strength of the pressure which has been brought to bear upon the companies. By reverting to the old conditions in such a vast number of cases, they have themselves proved most conclusively that those conditions had been needlessly disturbed. The only doubt is, whether the work of revision was really carried out at such high pressure as to render it impossible for the companies to foresee, or to stay to consider, its effect upon the trade of the country.

The Deputy-Chairman of the London and North-Western, in the course of a lucid explanation of the manner in which the work of revision was carried out, argues that the temporary abolition of the exceptional rates which have gradually come into existence accounts for most of the extraordinary advances to which attention has been called, and states that these special rates are being reinstated wherever it becomes evident that they are necessary. We cannot see but that it would have been more to the point to have let them alone till it became evident that they were *not* necessary. Mr. Cawkwell, in his explanatory letter, gives a rather new rendering of the principle upon which some rates are fixed. Instead of "what the traffic will bear," it is represented as being determined rather by "what diminution of revenue can the company bear." The class rates once fixed, exceptional rates are continually being arranged "for facilitating and encouraging traffic," such special rates being a reduction on the ordinary class rates applicable, the extent of the reduction depending upon how much of the normal rate the company can afford to forego.

This letter was quickly followed by a strong remonstrance from Sir Courtenay Boyle, complaining generally of the additional burdens which were being imposed upon so many industries, with particular reference to certain questions affecting general conditions. Attention was called, for instance, to the omission to state the rebates allowed for services not performed by the companies; the unreasonable nature of the agreement to be signed by traders wishing to avail themselves of Owners' Risk rates; and the impossibility of ascertaining from the rate-books whether station terminals are or are not included in a rate. Sir Courtenay Boyle also remarked upon the fact that no instance had been proved to the satisfaction of the Board of Trade in which there has been any material reduction of rate in consequence of the action of the Legislature; and concluded by earnestly pressing upon the companies

the importance of making, as speedily as possible, such concessions as would satisfy the reasonable requirements of the trading community. The Railway Association at once gave a guarded promise of compliance, it being referred to each company to make such public announcement as it might think desirable. This seems to indicate a split in the cabinet, a division of opinion evidently existing between the members of the Railway Association as to the extent to which they are prepared to give way. Indeed, it is understood that some of the managers were not unwilling to guarantee that no advances should exceed 5 per cent. upon the old rates—a startling contrast to the figures submitted by Sir A. Rollit and Sir J. Whitehead during the debate alluded to—while others objected to this course. Several of the leading companies have issued instructions to their station agents to accept payment of all accounts on the basis of a maximum advance of 5 per cent. upon the old rates, and to reinstate all last year's special rates for iron and steel. It is added that this course will entail considerable loss, and the right is reserved of "moderately increasing certain rates when trade and agriculture revive." As to the reductions, returns have been promised giving thousands of instances; and these will be awaited with considerable interest, as it is a subject upon which many people have been sorely puzzled. Will the explanation be found in the coal rates? We have been credibly informed that large manufacturers, who have had advances in both inward and outward rates for every description of traffic conveyed for them, have turned to their coal accounts confidently expecting to find some compensation there, but only to be disappointed. The whole of their traffic passes over the lines of the great coal-carrying companies, and it has always been understood that the "loss of revenue" so frequently referred to by the companies was largely through reductions in the coal rates. In the cases alluded to, however, so far from the trader being favoured by the new rates, there has not been a single case of reduction, while some rates have even been raised.

It now appears probable that the whole question will be made the subject of a Government inquiry, when, of course, these points will be made somewhat clearer than they are at present; but the widespread nature of the dissatisfaction is evident from the resolution unanimously passed by the House:—"That, in the opinion of this House, the revised railway rates, charges, and conditions of traffic are most prejudicial to the industries and agricultural and commercial interests of the country, and this House urges upon the Government the necessity of dealing promptly and effectively with the subject." The resolution, as originally drafted, was of a still more drastic character, a proposal being made for the establishment "in connection with the Board of Trade or otherwise, of a cheap, simple, and expeditious mode of determining, in case of dispute what are reasonable or unreasonable rates, charges, and conditions." It is not surprising that Mr. Mundella contrived to get the latter part of the motion dropped. The Board of Trade can appreciate, far better than anyone else, the difficult nature of the task it was proposed to assign to them, having had so much experience in their mediatorial capacity. The Board can at present, do no more than protest against any evident injustice, so long as the rates charged are within the statutory maxima, and do not infringe the law of undue preference. The historic inquiries ultimately fixed a line beyond which the companies could not go, but within which—subject to the limitation just referred to—they are, *at present*, masters of the situation. A law peer has declared that he would never permit the right of a company to charge a rate sanctioned by Parliament to be called in question. Further, Mr. Acworth says, in the *New Review* for February, that even now that the maxima are fixed more clearly than they have ever been before, it will often need the united efforts of a railway lawyer and a traffic expert to unravel the statutory maxima in the case of through traffics. His opinion is that if the responsibility for actual rate-making is transferred from railway experts to the Board of Trade, the policy can only end in "well-earned failure." Without suggesting that Mr. Mundella or the officials of the Board share this view, it seems clear that the experience of the past few weeks has caused them to hesitate somewhat. It would, however, be a much easier and less complicated matter to decide whether a charge was reasonable or not, than to decide upon its legality; and if the present agitation should result in rates being tested from the more simple standpoint, the companies will certainly only have themselves to thank for the change.

Of course, the Railway Commission is always available in case of dispute, and decisions arrived at by the Commissioners are binding. But it has always been urged—and the argument was repeated during the recent discussion—that this tribunal is far too costly. The small extent to which the Railway and Canal Commission is utilised may be gathered from the fact that during the year 1892 the Commissioners only sat in Court twenty-two days. This is exclusive of meetings for the purpose of considering judgments and so on, but it is a very small record indeed for a Court from which so much was hoped. Certainly, Mr. Mundella's "conciliation clause" may have profitably diverted some cases from the Commission, but it is not unlikely that one result of the present agitation will be some alteration tending to make this Court more accessible, and thus more effective.

The railway managers have tardily awakened to the fact that, in spite of Mr. Acworth's prophecy, the Government would be pressed to take more extended powers in dealing with this question if necessary. "Agree with thine adversary quickly" has been the advice tendered to the companies, with the alternative alluded to in the event of non-compliance; and they now appear to have come to the determination to act upon this advice. There are other causes, in addition to the firm attitude of Parliament, and the threatened blocking of their Bills, which may have conduced to the more enlightened policy which they have now decided upon. In many districts their traffic is falling off, both land and water carriage taking the place of the railway. Canal and coasting competition has been utilised where available, while in Glasgow, Kilmarnock, and many other places in Scotland a considerable amount of traffic has been diverted to the turnpike roads. The only security for the future—in the absence of any further legislation—lies in the probability that the storm which the companies are now encountering will deter them from raising another by repeating this experiment. It is to be hoped that the promised reversion to something approximating to the old rates will be adhered to in good faith, and that this troublesome question will be satisfactorily adjusted without further disturbance to the trade of the country.

NOTES.

APPARENTLY no inquiries worth the name are to be made respecting the failure of the two mill-chimneys, mentioned in our Notes last week. The one at St. Helen's, which was 300 ft. high, with a diameter of about 24 ft. at the base and 12 ft. at the top, was erected in 1850-1, and had, therefore, been in existence for more than forty years. Like the one at Widnes, it was known to be out of repair; the very day before it fell, it had been strengthened (?) with an iron band. Fortunately, the failure occurred in the middle of the night, and no lives were lost. And, presumably, because no lives were lost, there is to be no inquiry. This is a mistake, for the lessons to be learnt from such a failure are the same whether men are killed by it or not. The plain fact is that the chimney fell; and such an occurrence is attributable to some cause. An inquiry might have elicited this cause, and might, therefore, have been the means of preventing similar accidents in the future. One circumstance is common to these two failures, and to many others, such as the Cleckheaton disaster last year, viz., the chimneys were known to be unsound, and were, indeed, being repaired at the time of their collapse. We may fairly infer that the repair of the chimneys had been deferred until it was too late. The old adage, "A stitch in time saves nine," is true of buildings as of garments, and the owners of mills ought to know that the neglect of repairs is economically wrong, besides being in many instances morally wrong too.

THE fourth of the Carpenters' Hall series of lectures was delivered on Wednesday evening by Mr. J. Alfred Gotch upon the subject of the early Renaissance in England. The lecturer, in opening his subject, necessarily touched upon one or two points that have been referred to in the previous lecture on Italian Renaissance, and then confined himself to the English development of the universal movement of the times. The discovery of America, the invention of printing, and the Renaissance in Art were mentioned in turn. It was pointed out that the story of the English Renaissance was more particularly a story of domestic buildings of a sumptuous character, and not of church building, though many instances of church decoration are attributable to the period between 1560 and 1620 in which the principal buildings in the style were erected, and these houses owed their origin in a great number of cases to the wealth that accrued to the nobles upon the dissolution of the monasteries. The lecture was admirably illustrated by lantern slides, and the first examples shown were Tresham's triangular house and the Lyveden new buildings in Northamptonshire, the curious symbolism employed in this design receiving special attention. The well-known examples of Longleat, Kirby Hall, Castle Ashby, Aston Hall, near Birmingham, Blickling Hall, and Fountains Hall were in turn illustrated and described. Not the least interesting portion of the lecture was the description of the gradual development of the fortified house, which, owing to the unsettled state of the country, had been so necessary, into the Elizabethan mansion, with its wealth of windows in the external walls, contrasting strikingly with the earlier building, with its rooms lighted from a central courtyard. In describing and illustrating the interiors, for the richness of which the Renaissance period is specially noticeable, Trinity Hall, Cambridge, with its hall, screen, and minstrels' gallery, Wadham College, Oxford, Hatfield, Knole, and Wraxall were specially mentioned. Mr. Gotch's lecture was an interesting conception of an interesting period. It was slightly marred at times by an undue straining after the facetious remark.

THE curiosities of contracts are inexhaustible; the latest is contained in the case of Jackson *v.* Barry Railway Company, reported in the current number of the *Law Reports*, in which it was admitted that a contractor had, in effect, agreed that the engineer of the employer should act as arbitrator. "It was," said Lord Justice Bowen in his judgment, "an essential feature in the contract between the plaintiff and the railway company that a dispute, such as that which has arisen between the plaintiff and the company's engineer, should be finally decided, not by a stranger or a wholly unbiassed person, but by the company's engineer himself. Technically, the conflict is one between the plaintiff and the railway company; but virtu-

ally the engineer, on such an occasion, must be the judge, so to speak, in his own quarrel. Employers find it necessary in their own interests, it seems, to impose such terms on the contractors whose tender they accept, and the contractors are willing, in order that their tenders should be accepted, to be bound by such terms.' Lord Justice Bowen then proceeds to point out that if parties enter into "such curiously-coloured contracts," it is no business of the Court to upset them. In the present case the plaintiff had successfully applied to Mr. Justice Kekewich for an injunction to prevent the arbitration from proceeding before the engineer, on the ground that his correspondence showed that he had prejudiced the question. But the decision was reversed by the Court of Appeal, which pointed out that the engineer necessarily had formed an opinion on the matter, being a detail of the work to be done, but would no doubt listen to anything urged before him by the contractor and refer any question of law to the Courts. Nothing, indeed, can be more unreasonable than for a contractor to blow hot and cold in this manner; if he wishes to have a purely unbiassed decision, he should stipulate in the contract that any dispute shall be referred to a person unconnected with the work. If he does not do this he must put up with the consequences, which are that practically the arbitration clause is, so far as he is concerned, absolutely valueless.

THE output of pig-iron and Bessemer steel in Great Britain during 1892, according to the statistics just issued by the British Iron Trade Association, was much less than in the preceding year, when, it will be remembered, the production was greatly below that of 1890. The British iron trade has thus passed through two years of increasing depression, and there are some who affirm that the last of the decline has not yet been seen. The total production of pig-iron in 1892 was 6,616,890 tons, compared with 7,228,496 tons in 1891. The decrease last year was, therefore, 611,606 tons, or almost 8½ per cent. Amongst the pig-iron producing districts, Cleveland was the greatest loser, her output having declined by 685,263 tons, owing to the stoppage of the furnaces through the three months' strike of the Durham miners. From the same cause, the production of Cumberland fell off by 121,931 tons, and of Lancashire by 123,294 tons. Independently of the stoppage of fuel through the strike, there were smaller decreases of production in South and North Wales, Derbyshire, South Staffordshire, and Lincolnshire. Scotland, thanks to the temporary suspension of blast-furnace operations in Cleveland, was able to increase her production by 302,788 tons. The outputs of North Staffordshire, Nottinghamshire and Leicestershire, South and West Yorkshire, Northamptonshire, and Shropshire showed minor increases. The home consumption of pig-iron in 1892 declined by 278,782 tons, or nearly 4·3 per cent., being only 6,209,705 tons, against 6,488,487 tons in 1891. Owing to the stoppage caused by the strike, the stocks of pig-iron were reduced during the year by 360,182 tons, or 29 per cent., amounting on December 31 last to 872,095 tons, against 1,232,277 tons at the same date in 1891. The production of Bessemer steel ingots in 1892 experienced a decrease of 141,195 tons, or 8·6 per cent., the total output being 1,500,810 tons, compared with 1,642,005 tons in 1891. There was a very heavy decline in the production of Bessemer steel rails. Only 535,836 tons of rails were produced, against 662,676 tons in 1891, the falling-off being thus 126,750 tons, or close upon 20 per cent.

AN "eligible site" for building, surrounded by houses, and not built upon before for reasons obvious to all who know it, is shortly to be brought to the hammer. It is a little over ten acres in extent. Its history is within living memory. First it was known as a brick field. Many millions of bricks were made out of the clay which it yielded. Surrounding estates were built upon and the houses came to the borders of the brickfield. At last the brick-burning became a nuisance and on the complaints of the surrounding residents it was put a stop to. Then the process of filling up the excavations began. They had gone to the depth in some parts of from 20 ft. to 30 ft. Thousands of cartloads of cinders, house refuse, and street sweepings were thrown upon the land. Some of the refuse discharged was so offensive that the aid of the parish authorities had to be again invoked to put a stop to a nuisance. Meanwhile the land was "laid out" in streets, the plans of which received the formal approval of the Vestry and the Metropolitan Board of Works. The streets were also commenced upon the solid ground or virgin soil, as the phrase is; but building stopped when it came to the verge of the clay pits. At one corner a board school was built, and the master had sometimes to close the windows because of the overpowering smell from a polluted pool, which the parish authorities had at last to deal with. The Wesleyans built a Mission Hall on the solid margin. Behind that hall Messrs. Carter, Paterson, & Co., built a depôt with stabling for ninety horses. To get a foundation for the rear wall of the stables they had to dig, to use the expression of an informant, "half as deep as the school is high." The general impression of all who know the ground is that it must be a most unhealthy site for dwellings, even if the basements were perfectly concreted. It is further believed that it would ruin any builder who dug to the depth necessary to obtain a solid foundation. As it is believed to be most undesirable and most improbable that the land should be built upon, and as it is surrounded by small houses largely occupied by working men, it is proposed that the land should be acquired by the County Council and converted into allotments. Memorials with this prayer, and bearing 100 signatures, were last week presented by Mr. Hubbard to the County Council. The memorials will go to the Allotments Committee. There will, of course, be inquiry as to the expediency, from a sanitary point of view, of allowing the land to be built upon. No injustice can be done to the estate, seeing that it has already profited from the sale of the bricks made, and, again, from the money received for allowing the land to be used as a dumping ground. The land in question is known as Loat's Land, and it lies between Acre-lane, Brixton, and Cornwall-road, Brixton Hill.

THE School Board of Gravesend seem to do business in a very remarkable manner. There has been a competition for new schools, in regard to which it was announced at a meeting of the Board that there were four votes (by ballot) for the design of Mr. J. J. Robson and four for that by Messrs. Cobham, whereupon the chairman gave a casting vote for the former. On Messrs. Cobham being informed of the voting, and that they had been awarded the second premium, they wrote claiming the first, as *six* members of the Board had told them that they had voted for their (Messrs. Cobham's) design. Thereupon ensued one of the most edifying wrangles we ever remember to have read in the proceedings of a body of that kind, in the course of which it came out that the chairman, who had given the casting vote for Mr. Robson's design, had in pure lightness of heart carried away and destroyed the balloting papers, while on the other hand the six members who had been named by Messrs. Cobham duly confirmed the fact that they did all vote for the design of the latter. Ultimately it was agreed to try what an appeal to the architects would do, and these gentlemen had the good sense to settle it amicably between themselves, Mr. J. J. Robson accepting a compensation from Messrs. Cobham and ceding to them the first place on condition of his being given the second premium. The architects may thus be said to have come well out of the affair, which is more than can be said for the Board.

MRS. P. H. NEWMAN delivered a lecture, entitled "Gold Ornaments," on Thursday last, before the Society for the Encouragement of the Fine Arts, which was in many respects a remarkable one. Mrs. Newman is known to some of our readers as having established an *atelier* for the production of articles of jewellery of high art and correct taste. Her lecture proved that she is as conversant with the history of the craft that she has chosen as with its artistic design. With rapid progress she traced the rise of the art of the goldsmith in early times, and its development in the various countries of the East, in Greece and Rome, referring to the treasures rescued from the hand of time, now preserved at Vienna, Athens, and in the British Museum, she appearing to be conversant with all. The delicacy and beauty of many of the ancient examples were contrasted with the poor and unsuitable designs of much modern work. Referring to the excellence and delicacy of some works of the present time, she narrated Sig. Castellani's happy discovery in a small village on the Apennines, of some native gold-workers who still practised there some of the supposed lost arts of the ancient Etruscans. The hall in Conduit-street was crowded by the members and their friends, who frequently rendered well-deserved applause; for not only was the matter arranged with skill in a form suited to a lecture, but the delivery was excellent. This is the more remarkable, since we understand that this was the lecturer's first public essay. An animated discussion followed, in which Messrs. Forbes Robertson, Haité, Loftus Brock, Heighton, and Dr. Leitner took part. At the close of the proceedings, the vote of thanks proposed by the chairman, Dr. Phené, F.S.A., &c., was carried by acclamation. Several specimens of gold manufacture were exhibited, including one showing the peculiar granulated work of early times, each grain being solidly fixed to the surface of the article, as in the ancient models.

IT may be questioned whether the exhibition at the Fine Art Society's Gallery of "Pictures illustrating the Highlands and Lowlands of Scotland," by Mr. J. Farquharson, was altogether a well-judged undertaking; the artist has hardly that individuality and power of style which will bear the ordeal of the collection of a number of works by the same painter in the same room; a severe test even in the case of men of admittedly first-rate reputation. There are, however, some exceedingly charming works in the collection. In "Through Yellow Waving Fields" (6) there is a remarkably true and vivid effect of sunlight and shadow; the sea-coast scenes are mostly very good; the desolate effect of a snowed country in mid-winter is admirably given in No. 63, which is superior in truth and power to the larger snow pieces. Among others we especially like "Day's Dying Glow" (34), "Tansies" (42), "A Lonely Shore" (55), while "A Window in Thrums" (56) exactly answers to one's idea of the celebrated window in Mr. Barrie's remarkable book. The exhibition, however, certainly suggests the reflection that not all clever painters are strong enough to make a "one-man exhibition."

THE Exhibition of the Institute of Painters in Water-Colours, opened this week at their galleries, contains a larger percentage of good or interesting works than usual, though still beset with much of commonplace, as it must inevitably be as long as the Institute continue to endeavour to fill

galleries larger than they can supply with first-class work. The President's principal exhibit this year is a portrait, "Mrs. J. T. Wimperis" (380), in a picturesque costume which furnishes Sir J. Linton with good material for his rich and masterly treatment of dress in painting, the face being a somewhat subordinate consideration. His "Anthea" (235) is another example (we see too many) of the tacking of a poetic title and quotation to a mere prosaic study of a very ordinary head. Of other figure pictures we have Mr. Frank Dadd's "In the Hands of the Philistines" (211) which shows very carefully studied character in the three figures, but rather a want of point or meaning as to the incident; Mr. Dollman's "Shearing the Lambs" (282), a highwayman receiving the contributions of a party of women and children, which is a humorous scene rather than a good picture; and Mr. C. Green's "Sir Roger de Coverley" (262), which is good both in humour and pictorial effect, and is the central work of the collection. The tendency to paint jokes is becoming an increasing vice at the Institute, as in Mr. Evans's "A Passage of Arms" (554), a large picture, clever enough in execution, but all wasted on a poor piece of would-be humour. Mr. Stocks's "Sea Idyll" (202), a woman bathing in a sea-cave, is not altogether a success; as a matter of colour, the surroundings are better than the figure. It is in landscape that the exhibition is strongest, and especially it includes a good many small sea and coast scenes of more than usual interest: such as Mr. F. Walton's two (10 and 16); Mr. Carter's "Clovelly Herrings" (196; Mr. Hamilton Macallum's "Ebb Water" and "Drift-wood" (234 and 244), the latter especially; and Mr. Wyllie's "North Atlantic" (254), which has the effect of a large sea piece reduced to a small scale. Among the larger landseapes, Mr. Bernard Evans's "Valley of the Wharfe" (112) is grand in style if a little heavy and conventional. Mr. James Orrock's "Smailholm Tower" (164) is a study in the old broad water-colour style, perhaps a little deficient in local colour. Mr. Alfred East's "Streatley Bridge, Sunset "(408), and "The Moonlit Harbour, Hayle" (516), arrest the attention at once, amid the number of only mediocre works, as the production of an artist with an original power of his own. Mr. Wimperis contributes several works in that characteristically broad and free style in which he may be said to be the most faithful follower of David Cox; "A Suffolk Estuary" (584), with a flat landscape and a grand sky, is the finest. Mr. Huson's "Chat Moss" (668), is a landscape with merit of a similar kind. Among other landscapes may be mentioned those of Mr. Harry Hine, the small one "In the Valley of the Usk" (279), is perhaps the best; Mr. Knight's "Across the Warren" (187), very real in effect, and yet with a rather mechanical aspect; "Lengthening Shadows" (26), is a finer though smaller and less pretentious work. There are an unusual number of Venice pictures: "Puerta de Passage" (66), by Mr. F. Brangwyn; "The Ducal Palace" (95), a large and fine architectural drawing by Mr. Fulleylove; "San Salute and Dogana" (205), by Mr. Pilleau; "San Marco" (259), by Mr. Fulleylove; "Venice" (611), by Count Seckendorff; and some others. Among drawings of architectural subjects we may mention also "The Market Place, Amiens" (38), by Mr. Harry Goodwin; "Returning from Market, Dort" (110), by Mr. W. G. Miller; "Main Street in Hamelin" (188), by Mr. R. Phené Spiers; "Lavenham" (318), by Mr. Yeend King; "Hatfield House" (363), by Mrs. Harry Hine; and "Asolo" (441), by Mr. Fulleylove. Among works not included in the foregoing classification may be mentioned, as specially worthy of notice, "Making Friends" (228), by Mr. Townley Green, apparently a reminiscence of Hampton Court Gardens; "In the Dumps" (253), by Mr. E. J. Gregory; "Rhododendrons" (261), a powerful realistic study of flowers, by Mr. A. Dudley; "Innocence" (267), a perfect kitten picture, by Mdme. Ronner; "Boy's Love" (512), a "rustic idyll," by Mr. W. Rainey; "New Bedding" (519), an interior of a cow-house, with cattle and a figure, very broadly and powerfully treated, and one of the most original works in the gallery; "The Last Century" (527), a pretty group by Mr. Hugh Carter; "In the Desert" (581), a picture with a lion and lioness, finely designed and drawn, occupying the centre of an empty landscape; and "The Highwayman's Choice" (652), by Miss Gertrude Demain-Hammond, a clever work, which has the defect of not telling its story very clearly.

WHAT IS ARCHITECTURE, AND HOW CAN IT BE ADVANCED?*

BY PROFESSOR AITCHISON, A.R.A.

THERE is one thing on which the architects of the present day may congratulate themselves. They can now see the different phases architecture has taken in its progress through the ages, its successive developments, and the different branches that have sprung from the parent stem; branches that in some cases have been like those of the banyan tree, and have taken root themselves, and have, in some respects, surpassed the parent stem. We see, for instance, the Greek trunk that was transplanted to Rome; the Roman and Byzantine trunks that together gave rise to the Saracen branch, which still lives, after being grafted with Romanesque, Gothic, and Indian; the Romanesque branch from the Roman and Byzantine trunks, and its ultimate luxuriance in Gothic, after its graft from the Saracen.

We no longer look upon architecture as a collection of inert masses, but as an organism that, animated by man's spirit, has thrown out branches, some of which have again taken root and flourished.

If extended views are to be looked on as an advantage, we certainly enjoy them; for we have made great advances in the comprehension of this subject, from the time that Vitruvius treated the æsthetic part like a recipe from a cookery-book, to the time when architecture was treated by Viollet-le-Duc like comparative anatomy.

I think it is only due to the great men who have helped to produce this result, that we should mention them with respect and gratitude; from Professor Willis, who made clear to us the geometrical knowledge and skilful stone-cutting of the Middle Ages, to M. Choisy, who discovered for us the methods of building adopted by the Romans and Byzantines: methods that were quite unsuspected until the publication of his works. Our thanks, too, are due to M. Corroyer, for his book on Romanesque Architecture, in which he has so admirably shown, in a small compass, the effect of the important buildings in the old Roman Empire, on those subsequently erected. This truth has, I fear, generally escaped the notice of writers on architecture. In certain places the effect on the imagination of a grand and venerated building is very perceptible. The predominance of arched forms in the exterior of St. Mark's at Venice, shows its effect on the minds of architects in many Venetian buildings, and is particularly noticeable in the Hospital of St. Mark. We have also received great assistance from amateurs, and, in fact, Professor Willis was an amateur; and though some of these amateurs may have shortcomings, they have done a great deal to make the art popular, and even to give instruction to architects. Besides his eloquence, Mr. Ruskin has told us many truths, and illustrated many principles; while Fergusson has grouped together the greater part of all the systems, and all the buildings in the world. But there are two living architects to whom our thanks are specially due, for their contributions to the subject of these lectures, to Mr. Eidlitz for his book on "The Nature and Function of Art," and to that veteran in architecture, M. César Daly, to whom we in England owe much. He alone, to speak of nothing else, has preserved for us drawings of the Reform Club; but it is, in the present case, particularly due to him, for his directing our attention to the means of improvement, by his pamphlet on the "Higher Studies."

These books aid us thus far in the practical exercise of the art, by their teaching us what to learn, and how to learn it; and they not only stimulate and encourage us, but dispel from our minds that dreary fallacy, that all that can be done has been done, and that there are no further grand achievements to be expected.

The great thing to be desired, under present conditions, is individual effort in the right direction; for I do not see how anything but individual effort is to help us out of our present dilemma, when architecture is not so much an art as a fashion; and I think that if we can once agree on the thing to be aimed at, though most of our bullets may miss the mark, still, when all the bullets are directed to that mark, it must be hit at last. I don't think the engineers have any other mark than the solving problems in the best and cheapest way, but that way is every day being made clearer to them.

Our aim is to express in our buildings for the noblest purpose the highest tendencies and emotions that animate society, and in other buildings the emotions that should be evoked by the uses to which they are put.

As I said before, all that can be taught is the use of our tools; natural aptitude, capacity, and genius we cannot give.

To look at another branch of art; we long for a new Shakspeare, a new Milton, a new Burns, and a new Tennyson, to give expression to the courage, the nobility, the self-devotion, and the other virtues that exist among us: and also to portray the picturesque, the thrilling, the humorous, and the terrible scenes that occur. We naturally ask, why we do not get such great geniuses now? but the cause of this want apparently lies too deep to be found out. We hope that the age in which we live is one of the finest that the world has seen; but we cannot be without a suspicion that the lack of such great men is owing to some deterioration in society: we hope at least that we have not added our forty-millionth part to this deterioration, by our own thoughtlessness and folly. The past is ours no longer, but each of us can determine for the future to have a lofty aim, and to live up to his ideal as nearly, at least, as poor human nature will let him. There are, however, some evils which afflict the nation which can by no means be laid to the charge of the architects. There must be opportunity, and some will say, without thinking, that there never were such opportunities; but such opportunities are like offering to Milton the chronicling of a Lord Mayor's feast. It is not only necessary to give the mere opportunity of building, but of embodying the highest aspirations of the people in the noblest way. If the nation will settle the sort of building that will embody these aspirations, and approach the solution in the way the Florentines approached theirs, we should have a chance of starting on a new career. In those days, all the highest aspirations were centred in a cathedral, and the merchants and manufacturers of Florence determined when they rebuilt their old cathedral, and dedicated the new one to St. Mary of the Blossom, that it should be the largest and most magnificent that was ever built by man, surpassing the finest works of the Greeks and Romans; that it should be incrusted outside with worked marble, that it should have marble cornices, pilasters and columns, carved foliage and figures.

And I also think that there must be appreciation; it could hardly be expected that we should have great musicians if all but the musicians were deaf; they, like the rest of the world, must live; but, unless musicians were very numerous indeed, which seems hardly likely to be the case amongst a deaf population, the great musicians would have no proper audience; and no man will give that incessant thought and toil which is necessary to perfect his art unless he has something more than mere wealth to repay him. He looks for the rapturous admiration and gratitude of his hearers, for that is the proper reward of all his striving, and a cure for all those dismal misgivings that have been eating out his heart. Now, as regards architecture, we want not only the opportunity of building structures that are to affect and charm mankind, but we also require the admiration, applause, and gratitude of our contemporaries. It seems, in the present day, ridiculous to speak of gratitude being bestowed on architects, for who ever heard of their getting anything but abuse? Nevertheless, they think it is their due: and it is certain that if they think they are neither to get applause now, nor fame hereafter, their efforts will be mainly directed to getting their living and keeping up their position; while what is most urgently wanted is an enthusiasm and single-minded devotion to infuse new life into architecture, so that it may again flourish as in the happy periods of the past.

The present state of society is very curious

* Being the sixth and last Royal Academy Lecture on Architecture this Session. Delivered on Thursday evening, February 9.

from an intellectual point of view; it seems to be supposed that the words that explain anything that man ought to know, do, or refrain from doing, are sufficient to make him see the force of them, and adopt their teaching; but this arises from an utter want of observation of the thoughts and habits of mankind. These lessons are wanted to be conveyed by the arts, so that they may form pictures that may at once be obvious and striking, or else the value of the teaching is almost sure to be overlooked.

Every one must see that the sun and moon are splendid things, that the colour of the sky when uncovered by clouds is lovely in the daytime, and perhaps even more lovely on clear nights when spangled with stars; that trees and flowers, brooks and lakes, rivers and the sea, woods and mountains, are beautiful to look on; that most animals are agreeable objects; that one of the delights of the country is the song of birds, the whispering of trees, and the murmur of brooks. If he be sufficiently reflective to ask himself why this is so, he will come to the conclusion that these things are made beautiful for the solace, delight, and cultivation of man, and that if, when he lives in large societies, and is surrounded by man's works, these are dull, ugly, or hideous, he not only loses this solace, delight, and cultivation, but blunts his capacities for the enjoyment of beauty, and loses the improvement that he would derive from those sources, and so becomes an inferior creature. What are the main things that are seen in a town, besides the strip of sky? People, animals, vehicles, and buildings. It seems obvious that if nature's works are pleasant and improve him, he should try and make his own works pleasant and improving too.

Now to speak of our clothes, which is all we see of man, except his face, and sometimes his hands. Are our clothes beautiful in form or colour? I think the universal answer would be No, and that they are not only ignoble in form and ugly in colour, but destroy all grace of move ment or action. All that can be said for our clothes is that they are tolerably convenient; but they even want variety, for nearly everyone is dressed alike, to give an appearance of equality, equality being one of the favourite fictions of the day. If a Prime Minister is a man fond of dress, and we accidentally see him in the street, we probably take him for an omnibus conductor out for a holiday. If he does not care for dress, we take him for an attorney's clerk out of work. We are worse dressed than the organ grinder's monkey; we have not even the scarlet robe with the spangles, nor the cap with the peacock's feather. If a minister were dressed as most persons invested with dignity and power have been, and even now are dressed in all countries that are not Christian, in magnificent robes, and surrounded by guards, he would doubly impress people; they would see at once that he was a person of importance; they would admire the beauty and richness of his dress, and he would as well stimulate them to try and rise to such a position. The same thing may be said of action, attitude, and tone of voice; no attempt is ever made to give dignity to motion, position, or discourse, at least so far as the latter is affected by the manner; people, even orators, only stand, lounge, talk, drawl, or chatter. Consequently pictures are hardly to be painted of individuals, that can be embraced under the head of fine art; and from the loss of handsome and becoming clothes, dignified movement, and artistic grouping, crowds become almost as unpicturesque and as unpaintable as the individual himself. Sculpture and statuary are even in a worse plight, for they have not the aid of colour to redeem the want of form. We sometimes wonder why the things made by savages are so beautiful in form, and so artistically decorated. The savages that make them are probably naked and are surrounded by the works of nature; in this way their memories get filled with beautiful forms; so that what they make is sure to assimilate with the beauties they see. Théophile Gautier said that, if you met with an elegant-shaped basket, or with a beautiful mat, it was probably made by savages, who were cannibals; while, if any article was hideous in form and repulsive in colour, it was probably made by a pious Christian in a highly civilised country. Men are naturally idolaters, and if they have not got a golden calf to worship, they will worship a leaden one, or one of clay. What is true of man's clothes is also true of his vehicles; the ancient biga and quadriga were noble things, and either, when carved in stone, made a splendid finish to a building; but any modern vehicle would degrade almost any building it was put on. The old streets of London are made up of dingy brick walls with holes in them; the new streets of shops and offices are without proper expression, being mostly of terra-cotta paraphrased from Renaissance palaces. The dignified monuments of the past were always rare, and are being pulled down daily from the mere greed of gain, to no end. The City, once picturesque from Wren's steeples, is now nearly bare, so there is nothing worth looking at but the horses, dogs, cats, and sparrows.

You can hardly expect people to give much consideration to the work that goes on within buildings if they are insignificant, ugly, or commonplace; and if you invest buildings with great dignity, beauty, and importance, in which commonplace work goes on, the effect is to make the work within contemptible or ridiculous.

There are two difficulties that present themselves to architects,—the difficulty of finding an adequate motive for a noble, dignified, or sublime building, and that of making the bulk of those who see it appreciate its excellence, not to speak of the mental efforts that have produced it. To speak of beauty alone, if we were the greatest admirers of it, we must in a very short time have this sense completely dulled, or live a life of misery, if we inhabit an English city. Every machine is hideous to look upon, and the present tendency is naturally towards ugliness, in the perfecting of every kind of instrument. The primitive musical instruments of savage nations are mostly odd; in the next stage they are mostly beautiful. Even to this day the long straight tuba or trumpet of the Romans has been seized on by artists as a striking and effective motive. The lyre and the lute are both admirable in shape, and the harp itself is not without grace; but almost every musical instrument that has lately been improved is ugly in shape, if not hideous. If we wanted a simile, we might say, "As ugly as a musical instrument." Wind instruments of the flute order are peculiarly preposterous, being covered over with triangular levers like the cranks of a bell; the "wry-necked fife" is almost beautiful as compared with them.

We cannot blame the engineers for making so many of their works ugly, because the problem they have to solve is not how to make a thing beautiful, but how to do it at all.

Architects, like the rest of the inhabitants of the country, have their faculties dulled by this constant succession of ugly and ignoble things; and even if they manage to create for themselves a mental environment of beauty; and create beautiful, dignified, or sublime works, that supreme reward, the rapturous admiration of their fellow-countrymen, is entirely withheld from them: because their countrymen are perfectly indifferent to the propriety, beauty, or ugliness of anything.

Aristotle tells us that the Greek scheme of education consisted in reading and writing, gymnastic, music, and drawing. The music did, I believe, include playing on some instrument; but that was only looked upon as a small, and by no means an essential part of musical education. Had it been, we can hardly imagine that Alcibiades would have been allowed to omit learning to play the flute, because he said it distorted his mouth.

Music with the Greeks meant a graceful movement of every part of their body, and of every motion they made. In fact, some sort of rhythmical cadence was supposed to pervade everything that was important and polite. We may hope some day to see engineering structures made graceful, dignified, or sublime; but until some new principle animates mankind, or that particular fraction of it which exists in England; we can hardly hope for becoming clothes, dignified movement, or artistic grouping. We may hope, however, that our statesmen will see the importance of making important functions, performed both by themselves and by the multitude, impressive and dignified. They would do so, if they knew and could realise the effect it has on the mind of man. Architects may, however, find one consolation, that their works, being obtrusive and mostly large, cannot escape notice; while their importance will always induce a select part of the community to take a certain interest in them.

It is, perhaps, a painful thing to say, but I fear it is nevertheless true, that all the teaching in the world will never convert a man, who has not the native genius for it, into a great architect. Still, no one knows whether he has genius or not, until he has first learned the elements, and then tried to apply them. Suppose a student is possessed of all the requisite knowledge—and by that I mean how the best former architects have produced their effects; how they have converted rude forms into elegant or beautiful ones; how they have applied the laws of composition; how they have got over those æsthetic difficulties that mostly arise; and the means they have employed to raise the higher emotions in the completed building—he will then, as a means of education, draw out an existing building that, in his judgment, is the best adapted to meet the requirements, that has the most daring construction, and has the best æsthetic appearance that its destination demands; and if this building be intended to raise the highest emotions, to see that it produces them. After doing this, he would paraphrase the building, correcting any errors he might discover, and expressing each part in his own architectural language, just as if he were paraphrasing some literary masterpiece. Pope was born a poet; when he had learned the elementary mechanism of his art, he translated Homer, and he paraphrased the satires of Donne and pieces of many of the poets, Greek, Latin, French, Italian, and English. If we knew as much about other poets, we should find them doing the same. The poets have not only taken ideas and metaphors from former poets, but have mostly borrowed their most striking phrases and beauties.

To return to architecture, let us say there is a case where cast-iron columns have to be used 30 diameters high; the task is to try and make them agreeable to the eye, without destroying their character or strength, or using a ridiculous excess of metal. A cast-iron girder, whose necessary requirements are a small upper, a large lower flange, and a web, must be treated in the same way. The success in doing such things as these shows what progress you have made in the practical æsthetics of your art.

I am inclined to recommend the student to take the carcase that has been got by the proper arrangement, and the proper construction, and try to get the effects he wants without paraphrasing buildings that exist. I think if this plan were pursued ardently, and with a determination to get an effect pleasing to him, that if he had genius, he would at least produce something that was more or less original and had some merit. It would be sure to have one merit, that of not being paraphrased from anything else. Noble simplicity is, of course, the very acme of perfection in all the arts; so we must set that end before us and strive to arrive at exquisiteness. When we begin, we may find our skill unequal to the task, and be obliged to use elaboration in parts; but as we proceed, the work would become more and more simple and effective.

When we admire buildings of former ages, erected in semi-barbarous times, we are obliged to make allowance for the times; but such allowances cannot be made for similar shortcomings in our own work, as we do not live in a barbarous age. It is a very good plan to consider that the walls of your building are to be covered with the best painting and sculpture of the day; you will then feel that any semi-barbarous work will not harmonise with the figures: and instead of degrading the figures to the level of the architecture, which is too commonly done; the proper way is to raise the architecture to the level of the figures.

The remarks I have made about the necessity of having buildings for the highest purposes, to enable the architect to show his powers, are comprehensible to everyone. But there are other conditions which are almost as necessary to make these buildings a worthy problem for a great architect to solve. They must be large, lofty, and not altogether simple, so that the construction and the lighting may be difficult. The æsthetic problems to be solved must be of a high order, and the emotions to be raised the most profound that human nature is capable of experiencing. Another important requisite for the perfection of architecture is that the highest class of buildings shall be frequently repeated, not only at the same epoch, but for many generations. Without the first condition, the highest powers of the best architect cannot be called into play, and without the latter the architecture is hardly likely to reach perfection.

It is clear that to the Romans the vertical and horizontal line were the type of the highest sort of building, while to us the arch is. But I suspect that we shall have to go back again to the rectilinear form, for that is the form that iron most conveniently and commonly takes, and I think we must look forward to iron taking the principal part in the buildings of the future. I mentioned some constructional objections to the use of iron, as well as the objection to its rapid transmission of heat, for this means in our damp climate, a rapid condensation of moisture. This condensation has been found so objectionable in London, that cast-iron columns have had to be

cased with plaster, to prevent pools of water being formed at their base.

The æsthetic objection to cast iron is this—that in large castings it is very difficult to get the faces true and the ornamental work cast finely, for the material is too hard to allow of chasing. The expedient of having the ornament cast separately, and pinned on, will not recommend itself to architects. I do not think the want of fineness is always an objection; for it is only on parts close to the eye that fineness is perceptible; and I hold, too, that the able architect should adapt his ornament to the material. There is one opportunity that iron will afford when it is used in magnificent buildings, it can be enamelled in all the beautiful colours that enamel affords. I cannot say whether enamel would cause much less condensation than the iron itself; still in magnificent buildings the air could be dried; and we can hardly imagine anything more splendid than well designed enamelled columns. For outside work enamel could hardly be used, until some better method can be discovered of applying it; as now pieces of the enamel flake off, when enamelled iron is exposed to the outer air. If the Barff process would really answer, *i.e.*, if it would last for centuries, I do not know than the dull black colour which iron takes under the process could not be effectively used.

At present the use of metal for the lining of buildings might be looked on with disfavour, even though we have Dr. Richardson for its advocate; but I presume this is a mere matter of habit. In early days it was thought the acme of propriety. Not to speak of the woodwork of Solomon's Temple, overlaid with gold, and the palace at Ecbatana with gold and silver, Homer dwells with great complacency on the metallic palace of Alcinous; and Plutarch tells us that though Phocion was without ostentation, he liked to have his house decent; and this seems to have involved its interior being lined with bronze plates. (*Plutarch's Lives:* "Phocion.") It is evident that a taste for the precious metals as wall linings revived during the Byzantine Empire. Constantine Porphyrogenitus gives many accounts of the metallic ornamentation of rooms and churches, including the silver pavement of one of the chapels enriched with niello.

It has occurred to me that some of the statements I have made seem to be contradictory, and this is not a comfortable position to leave the student in. As someone justly remarked, we hardly want Professors to teach us how to doubt! The two conflicting statements were these: that architecture should perfectly express the objects for which the building was erected; and the other, that buildings, both sacred and profane, had been used for both purposes without any apparent discordance. It would have been improper to have left you to suppose that the expression of former buildings did completely call up the special emotions that were wanted in each, when the contrary was really the case; for instance, the warm room of a public bath is not wanted to raise the same emotions that should be raised by a cathedral, but the size, height, proportion, and lighting of each, produced emotions which were only proper to the cathedral. My former statement was intended to convey the hope that we might eventually so individualise each particular emotion that a secular building could not be used as a sacred one, nor the reverse, without this improper conversion being apparent. I may of course be mistaken in this hope, and it may never be possible to express different emotions so exactly in architecture, that you cannot use one building for another purpose; though I think, if architecture alone cannot succeed, the desired result might be attained by means of appropriate sculpture. Music is vague too, but I do not think it is so vague as architecture, for music is, I think, capable of raising more varied impressions. I am not so capable as I could wish, of exactly defining all the various emotions that music can excite; but those most ignorant of music know that there are lively, cheerful, solemn, and mysterious phases of music. A jig could never be mistaken for a requiem, nor a comic tune for a hymn. Although architecture has marked phases, none, perhaps, are so strongly marked as those of music; though Newgate does not suggest a cheerful abode.

I think that any expression in architecture conveying the knowledge of what a building is used for, beyond its shape and openings, is wholly due to old associations; and I believe it is mainly owing to this that the persistence of the different styles of architecture is due. Almost all the old buildings that have been used for Christian worship in this country are either Romanesque or Gothic, and consequently we associate them with ecclesiastical work. Most of our old secular buildings for private use are either Elizabethan or Early Renaissance. Public buildings are mostly Classic, or of the later Italian Renaissance, and when any of these buildings have features that are proper to them, these features recall the purpose for which the building was originally built. In every past time, when a living style existed, it was universally applied to all sorts of buildings; the difference of expression in the building was owing to its material wants, and possibly in important buildings to the attention given to make them imposing.

The earlier we go back, the fewer private buildings we find; for there has in all times been a certain reverence shown by the conquerors to sacred buildings, except in the case of the conquerors being savages, or belonging to a different and antagonistic faith. To take Athens for an example: there is little to distinguish the Propylæum from the Parthenon, although the latter was a sacred edifice and the former was a secular one. We should know almost as little about the private houses of the Romans as we do about those of the Greeks, had it not been for the preservation of Pompeii and Herculaneum. But these towns were small watering-places, and give us no idea of the magnificence of the great Imperial palaces, nor of those of the nobles. More secular Gothic buildings have been preserved, owing to Gothic times being so much nearer to our own, for it is not much more than 250 years ago since the last important pieces of Gothic architecture were erected in England, viz., in the latter days of Charles I., so that many specimens of Gothic secular buildings have come down to us. The best foreign secular buildings of the Gothic period have a certain ecclesiastical flavour, in spite of our seeing, from the forms of the buildings, that they were secular. I have looked at buildings for all sorts of uses and of all epochs, from Greek days downwards, in the hope of finding certain forms, or groups of forms, used to express special abstract ideas, such as exultation, joy, grief, or adoration, but I have never found anything but provisions for the necessary wants of the building, the construction made agreeable to the eye, and ornamented in such a way as pleased the people of the time, and certain vague emotional effects; but whether these emotional effects have been expressly sought after or not, I cannot say. In the case of buildings whose size, height, width, or breadth produced emotions which make us call the effect sublime, it is impossible to say if the architects were not simply intent on showing specimens of their skill in construction, rather than in trying to create the emotions which now affect us.

The Pantheon, whose interior strikes us as being the most sublime of anything we have seen, also strikes architects as being but the glorified hot room of a bath; and when architects are satiated with the effect, and analyse the building, they always wonder what the great shield or damper was like that covered the opening, and what became of it.

The Pantheon seems too brilliant an invention to have been conceived off-hand, but we know of nothing from which the architect got the idea. Still there might have been hot rooms on a smaller scale, where a similar effect was seen; and the architect of the Pantheon being a genius, might have pictured to himself the imposing effect it would have on a grand scale; and how fitted it would be for a temple to all the gods. In the same way, at the Alhambra, the light arcades supporting pierced work might have been adopted by the architect as expressive of delight, as well as for the admission of the breeze.

We can see the immense advantages Mediæval days had over all subsequent times; there was continuity of teaching: and there was mainly one sort of building, viz., chapels, churches, and cathedrals, for nearly the same purposes, only of different sizes and grandeur; and these buildings were to excite the same emotions on an increasing scale. Therefore, we are not particularly astonished at the great results that were obtained. But we are astonished that an entirely novel æsthetic expression should have emerged; and that the geometrical ornament should have commended itself so strongly that it gradually overspread the building, inside and out. This was doubtless due to the familiarity of the Mediævals with Saracen work. Greek work, though it has a similar mystery about its origin, and perhaps about its rapid perfection after the Persian war, has no such mystery about its continuance, for its ultimate expression was very like its first. One of the great marks of the transcendent genius exhibited in Greek work is to be found in the impression it leaves on all architects, that they would have invented it if the Greeks had not forestalled them. In Gothic the idea is just the reverse, for until the key to its latest elaboration is got, Gothic impresses us in the same way that the stalactites of the Saracens do—we think neither could have been invented by human beings.

As I have so often said before, I believe that what taste there is amongst us mainly runs in the direction of artistic simplicity, while arrangements and construction rather run in the opposite direction; and it is by no means easy to imagine how complex arrangements and construction are to be treated with simplicity. We cannot help wondering how a Greek architect would have solved the following æsthetic problem:—Let us suppose that the circular end of a Gothic cathedral had been built in the rough, with all its piers, buttresses, and flying buttresses, and the Greek architect were told that the building was a temple, what would he have done to it, to invest it with the proper expression, having due regard to artistic simplicity? However, except I were a prophet I could not tell you what ultimate form English architecture is to take; all I can do is to repeat my former advice, the rest must be left to the happy inspirations of genius, when genius does us the favour of appearing. I would also recommend you to pursue the same study of the effect our atmosphere has on the forms and appearance of architecture, as the Greeks bestowed on the effect of Greek sunshine; that study alone would give an English character to our buildings. We want, too, some new plants chosen for our ornamental sculpture, that may give a new aspect to floral ornament, but although the sculptor may originate a new development of floral form, I cannot see how it is to flourish, if good and bad, old and new, equally fail to charm the public. The acanthus was taken from the Greeks by the Romans, and elaborated by them to the highest degree of excellence for monumental purposes; and subsequently, in the hands of the Renaissance architects, new beauties and somewhat new motives were added to it. The Renaissance artists developed new characteristics from striking plants, from the thistle in particular, and introduced flowers and grasses rarely used by the Romans. We must also get the sculptors to take more interest in architecture than they mostly do, if architecture and sculpture are to go hand in hand, as they did of yore. What is to be said about figure sculpture I know not, for contemporary clothed figures, even if treated by the best sculptors that ever lived, would destroy all feeling of grace or beauty, and make any building mean and ridiculous.

It has been said that the artist—and by that term I mean any adept in any of the fine arts—should imitate the behaviour of the man of science, who pursues his investigations and makes his discoveries without regard to the ignorant public, while his discoveries are only known to a few other scientific men, until some man of business sees that the application of one of these discoveries will meet a public want, and fill his pocket. But the arts are invented solely for the delight and instruction of man, and, with the exception of dancing, singing, and music, which are the spontaneous outcome of high spirits, are by no means their own reward; while the investigation of Nature's laws is not only a delight to the investigator, but raises him to a higher level than his fellows. I never heard of a poet, orator, story-teller, painter, sculptor, or architect, perfecting himself in the art for pure personal delight, with no one but himself to be charmed by his finished work.

> "Fame is the spur that the clear spirit doth raise,
> (That last infirmity of noble mind),
> To scorn delights, and live laborious days."

It must be clear to all, that if there is absolutely no desire for anything but bare shelter, as there was at the end of the last century and the beginning of this, that architecture as a fine art must cease, as it then did. Such a state of things shows mankind to be in a sadly degraded condition in that particular, if its highest ambition is to be housed in a plain dog-kennel or rabbit-hutch, but it may be above that state as regards the other fine arts; if it be in the same state as regards them all, history, as far as it is concerned, is a blank page. If there happen to be a city like Sybaris, filled with persons wholly intent on gain and feasting, mankind expresses its contempt of such persons, as the ancients did, by calling a worthless and contemptible person a Sybarite.

When one sees the intense devotion displayed by other artists in acquiring skill in their professions, I think there may be a slight remissness in the architectural students. It is true that the necessary knowledge in architecture is so great

and varied, that devotion cannot be confined to a single branch. Architects may, however, be stimulated to exertion by reflecting that the beauty or dignity they create is not fleeting, like that of music or acting, but may last for many centuries: and that buildings have mostly the advantage of size, which if properly treated, greatly impresses the beholder.

If we observe the laws of morality, which affect us as favourably as they do society, if we include their effects on the character; the art or life-work of anyone should be the true expression of his worship; so I beg all of you to devote yourselves heart and soul to the perfection of our art.

Architecture is not generally taken up by men of means, therefore a livelihood must be gained by it. Man, however, can live on very little, and if he do so, this self-denial leaves him a much greater opportunity of perfecting himself and of carrying out high aims. So I would recommend you to devote a considerable portion of your time to the designing of noble public monuments, for we can never tell that new ones may not be wanted for high objects, now undreamt of. The great Diogenes, who knew how to rule men, was a beggar; while Socrates said he kept himself and his family on five farthings a day. We cannot all expect to take the position of these great philosophers, but we may all recollect Franklin's lesson to his friends. When he was the editor of a journal, and published unpopular opinions, his friends predicted that he would lose his patronage; he invited them to supper to discuss this matter: the supper of many courses consisted solely of boiled oatmeal, technically called sawdust pudding: none of his guests could eat any, though Franklin made an excellent supper, and then said to his friends, "A man does not want patronage, who can live on sawdust puddings."

It may be fancied that I am opposed to extraneous cultivation in architects, but this is by no means the case. I should be delighted to see them all like Orgagna and Leonardo da Vinci, who were poets, painters, musicians, engineers, sculptors, and architects. But there seems to me so much to learn in architecture, that I am loth to see men exerting their powers on other subjects, before mastering the one which is to confer immortality upon them. I cannot shut my eyes to the fact that most poets, painters, sculptors, and musicians find that life is not too long to master their own professions, and I think the architectural students of to-day are determined to master theirs. Let us hope that mankind will be convinced of the supreme importance of fine buildings, not only to delight and instruct the nation, but also to serve as memorials of our greatness when the glory of England—though may that day be far distant!—has passed away; and that more and grander buildings will be insisted on by the nation for high purposes, which may display our sublime art.

SCREENS, THEIR TREATMENT AND SYMBOLISM:

THE ARCHITECTURAL ASSOCIATION.

THE ordinary fortnightly meeting of this Association was held on Friday, the 10th inst., in the meeting-room of the Royal Institute of British Architects, 9, Conduit-street, the President, Mr. H. O. Cresswell, in the chair.

The minutes of the previous meeting having been read and confirmed, Mr. A. H. Colquhoun was elected a member of the Association.

Mr. F. T. W. Goldsmith, hon. secretary, moved a hearty vote of thanks to Mr. John Belcher for his kindness in meeting the members of the Association at the new building for the Institute of Chartered Accountants, Coleman-street-buildings, Moorgate-street, on the 25th ult., and for conducting them over the building. This was agreed to unanimously.

Mr. G. H. Fellowes Prynne, F.R.I.B.A., then read a paper on "screens, their Treatment and Symbolism." After a few introductory observations, he said:—

Fascinating as is the study of isolated details of our art, such study is not without very distinct dangers. By the chance of living near, or otherwise being brought in contact with, some one beautiful feature or detail, naturally and healthfully inspires an interest which leads to careful study of the subject, which may in turn lead to the most helpful enthusiasm, but which becomes a danger and a pitfall to the grander conceptions of architectural design as a whole, if it is allowed to end in a hobby. Therefore, in choosing a detail I do so not because it is simply a hobby, but because it is a subject that I hope may not be so often ignored as it has been, but that screens may be treated as one of the great means by which our temples may again become more and more beautiful.

In the short time I have before me I must confine myself to church screen work solely and chancel screen work in particular, and in doing so I must say at once that the subject is so large a one and comprises such a vast amount of detail that it will be impossible for me to go minutely into the subject or to give more than a general outline of historical facts, and humbly to offer such suggestions in treatment as may perhaps be found useful to at least some of the younger members of the profession when they are called upon to use their abilities in the highest and noblest objects of design, the beautifying of God's house and the furniture thereof.

It may be inquired why it is I have in heading my paper connected the treatment with the symbolism of screens. It is simply because I consider them inseperable. Most undoubtedly screens were originally called into existence for useful as well as symbolical reasons; their natural usefulness is at once apparent for enclosing spaces, either with the object of preventing unnecessary intrusion or for sake of actual protection. Their symbolical use is not less apparent; that is in marking off and shielding a portion or portions of a building which are held to be places of special honour or specially the spots where the most sacred mysteries of the Christian religion offered, and in the case of chancel screens they symbolise the division between the life here and the life hereafter, or the separation between the higher and lower estate. And again, when passing under the Holy Rood it is intended to remind one that we cannot attain the highest blessings of Heaven without first passing under the shadow and sorrows of the Cross, or the passing from the Church Militant through the suffering of Calvary to the Church Triumphant.

From the earliest times and in all kinds and stages of religious worship have screens of one kind or another been used to mark off especially honoured spots. In the Jewish Church I need hardly point out that the Holy of Holies was the place where the Priest was alone allowed to enter, and the worshippers had to be content in knowing that the High Priest was pleading the great typical sacrifice on their behalf.

Although under the new dispensation all were allowed to be admitted to be partakers of the fruits of the atonement, and to join with the Priest in divine worship, yet is it to be thought for one moment that when the great fulfilment of the antitype had been consummated on Calvary, that the early followers of Christ should view with less honour the places where the great Christian memorial sacrifice was to be offered to the end of time.

Certain it is, however, that it was this reverence that led the early Christians to adopt the screen. The presbyterium or choir and sancturaries were separated from the rest of the building either by marble, stone, metal, or wood screens or balustrading not necessarily as high as those of later date, but seldom less than 4 ft. or 5 ft. from the nave floor level. In the decrees of the Second Council of Tours in A.D. 557 it is ordered that "lay persons are not to enter the chancel, which is divided off by screens, except to partake of the sacrament of the altar."

Old decrees and early writers still speak of this portion of the church as holy of holies. The altar was even veiled in some cases, and in the Eastern Church veiling is still the custom. In fact, history, ancient writings, and architecture itself all go to prove that it is simply a plain matter of fact that in the earliest and purest ages of the Church, chancel or altar screens were considered to be a very essential part of the furniture of a church. It is left for the highly enlightened and intellectual brains of these latter centuries to find or imagine something wrongful and superstitious in this useful and beautifully symbolical feature.

Yes, in these enlightened days if a faculty is wanted one often has either to omit the screen altogether or carefully to omit showing the gates, and if shown, one has to plead they are for safety. If you have not already learnt from sad experience, you would hardly credit how small and vexatious are the quibbles raised by the present day chancellors: they seem to put on their Popish spectacles and see Popery in every detail.

In the ancient planning of chancels, stone pulpits or ambones, similar to those shown on some of the sketches and photographs on the walls, were placed on either side on lower end of choir. The walls of these ambones often formed a kind of screen in themselves, and in some cases they were designed as part of the screen, as in the churches of the Frari, Venice, S.S. Nerri Achille, Rome, and St. Miniato, Florence. The Epistle was read from the southern and the Gospel from the northern ambones. These pulpits were also used for chanting the lessons and other portions of the Divine office.

The date of the introduction of rood-lofts is not known exactly, but they are of considerable antiquity. It is more than probable that the first suggestion of the rood-beam seen in many churches arose from two circumstances:—1st, the general use of tie-beams, and 2nd, the common and early custom of suspending a large cross in a prominent and central position. The combination of the two is, I think, the most natural suggestion to the mind.

Be that as it may, rood-screens and lofts of large dimensions were used at an early date, as that of S. Sophia, at Constantinople, was large enough for the crowning of emperors to take place in it, and at Rheims Cathedral the French kings were crowned in the rood-loft. Altars were sometimes erected in lofts at the foot of the rood.

The larger rood-lofts are generally ascended by two staircases, carried up either in circular turrets on either side, or in the thickness of the walls.

These staircases often became quite a feature, as in the examples of Exeter and other cathedrals. In foreign examples, staircases often go up in the thickness of the screen, as at Metz and Toul, and the church at Oberwessel (illustrated by one of Mr. Millard's sketches).

The earliest screens however, were undoubtedly of less massive and pretentious character than the rood-lofts to which I have just referred.

It was with the gradual growth of community life in the church, that the necessity for more distinctive and solid screens began to be felt.

In cathedrals, abbeys, collegiate and conventual churches, which were orginally used by large numbers of ecclesiastics, something more than a low wall or an open grille became absolutely essential for the repose and comfort of those who were compelled by the nature of their long devotional offices to remain so many hours in the church. Churches in those days were not heated by hot water, steam, and hot air. Kneeling was not interfered with by small or large bore pipes running under one's seat. The passages were not then adorned with cast-iron gratings, and one might leave or enter the church without the creaking and rattling grating proclaiming the fact to the whole church that you were on the move. Still, without these innovations the fact remains, the churches were not so comfortable, and to make devotional offices possible some protection from the cold draughts became positively necessary. Even at best, screen or no screen, on cold days it must have been many degrees removed from what we in this nineteenth century consider comfortable. It makes one feel that there is a truer ring about the devotion of these early Christian worshippers. It was, indeed, the case in those days that the words of the prophet Malachi were fulfilled, "For from the rising of the sun even unto the going down of the same, Thy name shall be great among the Gentiles, and in every place shall incense be offered unto my name and a pure offering."

Again, we must remember that the nave, transepts, and aisles were continuously thrown open to the lay worshippers who came in and out at all times of the day, and whose continuous moving about would have been most distracting to those saying their offices in the church.

The general form of the great rood-screens was in three, five, or seven bays, and in England the division are sometimes more numerous, as at Lincoln, York, Ripon, and other cathedrals. Parochial altars were generally placed on the nave side of the screen. On festivals and occasions of high services the Epistle and Gospel were read with great solemnity from the rood-loft, and so that all on both sides of the screen should be able to join the service, choirs were sometimes also placed in this position.

The dignity of reading the Gospel in this way at the foot of the great cross or crucifix appealed to the devout imagination of the worshippers of those days, and as a consequence we see, in the fourteenth, fifteenth, sixteenth, and even seventeenth centuries, rood-screens erected in hundreds of parochial churches.

The one central idea was, of course, the elevation of the Cross. That the first thing seen on entering the church should be the great and glorious symbol of the Christian Faith (a symbol that, shame to say, we have often to hunt for, and in some cases to hunt for in vain in our churches

at the present day); that those looking on the Cross might, in the words of Wordsworth, say—

> "Mindful of Him who in Orient born
> There lived, and on the Cross His life resigned
> And Who, from out the regions of the morn,
> Issuing in pomp shall come to judge mankind."

It may be safely asserted that, in almost every church up to the end of the sixteenth century, there was a screen of some kind or another, and that nearly all had the holy rood set up either on the screen or some equally conspicuous place. The word rood, perhaps I need hardly point out, is taken from the Saxon word "rude" or rood, meaning cross. The rood, as such, used upon a screen or beam, or hung from the roof, was seldom considered complete without attendant figures of the Blessed Virgin and St. John.

The custom of reading the Gospel from the rood-loft has generally fallen into disuse, and it is now perhaps questionable whether it is desirable in these days to design such massive and heavy screens as were called for in the fourteenth and following three centuries. Don't mistake me for a moment. I am the strongest possible advocate for the retention or restoration of the rood-screen in some form or another in every church in the land, but as long as the screen is crowned with its proper symbol—as long as the symbolism of the screen is acknowledged—and as long as the precincts of the sanctuary are properly protected from irreverent intrusion, I should be satisfied. But in designing a screen I should never for a moment aim at shutting out from view the altar and its surroundings; and while I have not much sympathy with the all-seeing mania of the present day, I should ever aim at not allowing the screen to usurp an undue prominence by obscuring the far more important feature—the altar. A dreary sight indeed it is to go into some of our dear old churches and be called upon to admire a roodless, but otherwise beautiful, screen as an ancient feature, a thing of antiquarian interest; aye! a thing of beauty of design and workmanship, each very well in their way; but when, on turning to the Holy Table, one sees a table that you would be ashamed to use in your own dining-room, one feels sadly that the admiration bestowed on this *detail* the screen, is but the mere admiration of an art curiosity, and not the reverent admiration and pleasure that one should feel in that the main object of this detail is the beautifying of God's House.

In no country in the world are there more churches with rood-screens, or remains of same, than in England, and for beauty of detail and workmanship we are hardly surpassed.

Having now spoken of the general historical and partially symbolic side of my question. I must, for the sake of convenience, divide the practical side into three sections:—1st, Stone Screens; 2nd, Wood Screens; 3rd, Metal Screens.

First, as regards the treatment of stone screens. The principal stone screens remaining in England are of the cathedral type such as those at Canterbury, York, Westminster, Lincoln, Gloucester, Exeter, Ripon, Norwich, Wells, St. Albans, and others. The general features of these are too well known to render it necessary that I should dwell further upon them in detail. I will, therefore, only pick out one or two leading points in treatment and designs.

The general appearance of these screens at present is of course very different from when they were first erected. In the first place the rood or crucifix with attendant figures have been removed in every case. In the majority of cases the sculptured figures that formerly occupied the many canopied niches have been destroyed or disfigured, and the niches now appear to be unmeaning architectural features. When on a visit to Winchester Cathedral, I was informed by the verger that one of the Deans had allowed the empty niches in the altar screen to be filled with stone urns (an illustration of the screen with these ornaments is given in Mr. Kitchen's most interesting book on the screen). I remarked that I supposed it was symbolical of a dead religion. The goodly verger turned on his heel and remarked, with evident indignation, "I don't know, sir; I don't know."

In many cases the rood has been replaced by a great organ with cases of fine design, but, in my humble opinion, they are and appear entirely out of place.

Of these latter, York Minster stands pre-eminent, and Exeter, Norwich, and Manchester are good examples. Of course, organ-builders and even musicians will insist that this is the best place for the organ. Do not be misled; from an ecclesiastical, devotional, and, I think, artistic point of view, the position is an utterly wrong one.

Choose the west end, transept, or sides if you like, but do not spoil the general vista of your churches by blocking them up in the centre with an organ. Do not let the organ be the first object to attract attention on entering the church, and usurp a false position of importance. In short, do not convert your churches into sacred music-halls.

I am anxious not to be mistaken. I desire as much as any man that the organ should have the power of speaking to the soul through the beautiful language that only an organ can speak. I desire to see the beautifully-designed organ cases, and I cannot too strongly condemn the far too prevalent custom of shutting away an organ in a mere box of a building, and thus destroying the effect of its soul-stirring notes.

No; a right place and space for all things is the motto. Depend upon it, however, more of our churches suffer from being over than under organed.

I feel in sympathy with a wish expressed by Charles I. on entering York Minster, that the organ might be removed so that the east window might be better seen.

Regarding these massive screens, I must confess that when in the nave I have a feeling of being shut out; especially has this struck me at Canterbury, where I think the nave, as at present, seems cold and undevotional in effect.

The beautiful fifteenth century screen in the transept of the martyrdom, Canterbury, is well worthy of notice. Of the various screens of the kind named, Exeter seems the most satisfactory. Details I will point out presently by the aid of the lantern slide.

There are not a large number of stone screens left in our parochial churches, but amongst the few I am able to exhibit the photographs of this evening I must mention the exceedingly rich example of a fifteenth open stone screen at Totnes, Devon, one of the finest of the kind in England; it is entirely and richly coloured, and the lower panels show the remains of various painted saints. For many years it was spoken of as an oak screen, the deception being from the fact that a part of the cornice is very evidently oak. There are many points in the treatment that are very uncommon, if not unique. The small canopy-work upon the face of the muntins is especially worthy of notice.

An interesting example of tomb screen-work exists at Paignton, Devon, and other stone screens at Clumstock and Colyton.

A simple thirteenth century screen at Skipton in Berkshire, of which I exhibit a drawing, was carefully restored by Mr. Withers some years ago from a small remaining fragment.

An extremely interesting and uncommon example of what I must call, for want of a better term "Constructional Screen work" exists at Westwell, in Kent; the treatment is very suggestive. It is in the form of three trefoil headed arches, supported on two slender columns. The church was restored by Mr. Ewan Christian some years ago.

Another noteworthy example is at Stebbing, in Essex, shown on one of the drawings. The flying tracery in centre opening originally carried the ancient rood, but, needless to say, this has been ruthlessly hacked away.

The screen to the Lady Chapel in Gloucester Cathedral is a fine perpendicular example of constructional screen work.*

LONDON IMPROVEMENTS BILL.—Mr. Ahrenfeld, lithographer, sends us a large scale plan of the new street proposed by the County Council from Southampton-row to the Strand, showing the existing streets and property affected by the proposed scheme.

OLYMPIC MUSIC HALL.—A company is being formed for converting the New Olympic Theatre, in Wych-street, into a music-hall, the premises being held on a lease for sixty years from December 25, 1889, at a rent rising to a maximum of 3,000*l.* a year. The present house was built by Messrs. Holliday & Greenwood, after the plans and designs of Messrs. Crewe & Sprague, architects. According to reports by Mr. E. Clark and Mr. W. Emden, architects, the premises occupy an area of about 14,000 ft. superficial, have a total capacity for about 3,000 persons, and the lease is worth from 45,000*l.* to 50,000*l.* The former estimates that the contemplated alterations, which include removal of the first-tier boxes, will cost 4,600*l.* The new theatre was opened by Mr. Wilson Barrett, lessee, on December 4, 1890. We gave a short account of its earlier history in a "Note" in our issue for July 13, 1889, and a description of the interior, fittings, &c., on December 13, 1890.

* The remainder of the paper, together with some notes of the discussion, in our next.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE ROYAL GOLD MEDAL.

A SPECIAL general meeting of this Institute was held on Monday evening last, Mr. J. Macvicar Anderson, President, in the chair, when it was resolved, *nem. con.*, on the motion of the President, seconded by Professor Kerr,

"That, subject to her Majesty's gracious sanction, the Royal Gold Medal for the year 1893 be presented to Mr. Richard Morris Hunt, Honorary Corresponding Member, New York, Corresponding Member of the Institut de France, for his executed works as an architect."

The proceedings of the special general meeting then terminated.

The tenth general meeting (business) of the Session was then held.

The death was announced of Mr. Alfred Pope Strong, Fellow.

The following gentlemen were then ballotted for and declared to be duly elected as Fellows, viz., Messrs. Rhodes Calvert (Bradford), Joseph Pilling (Bolton), Alfred Edward Purdie, Thomas Butler Wilson (Leeds), John Henry Woodhouse (Manchester), George Harry Willoughby (Manchester), Jesse Horsfall (Todmorden), and Edward Hewett, *Associate* (Manchester). Messrs. Alfred Ryshworth Hill, Edmund Herbert Child, and William Edward Johnson were elected Associates.

The Report of the Science Standing Committee upon Light and Air was brought up by Mr. Lewis Angell, and after some discussion it was resolved:—

"That the general principles of the Report upon Light and Air, prepared by the Science Standing Committee, be adopted, and that the Report be referred back to the Committee for reconsideration of details."

The meeting then terminated.

The next meeting of the Institute, which will be a special general meeting (for members only), will be held on Monday, March 27, for the following purposes:—(1) to receive and consider a recommendation of the Council that Mr. J. Macvicar Anderson, President, be requested to allow himself to be nominated as President for the ensuing year of office; and that, consequently, Bye-law 26 be suspended; (2) for the nomination and election of candidates for membership; and (3) for receiving a report from the Council as to the qualifications of Fellows under Section 3 of the Charter.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

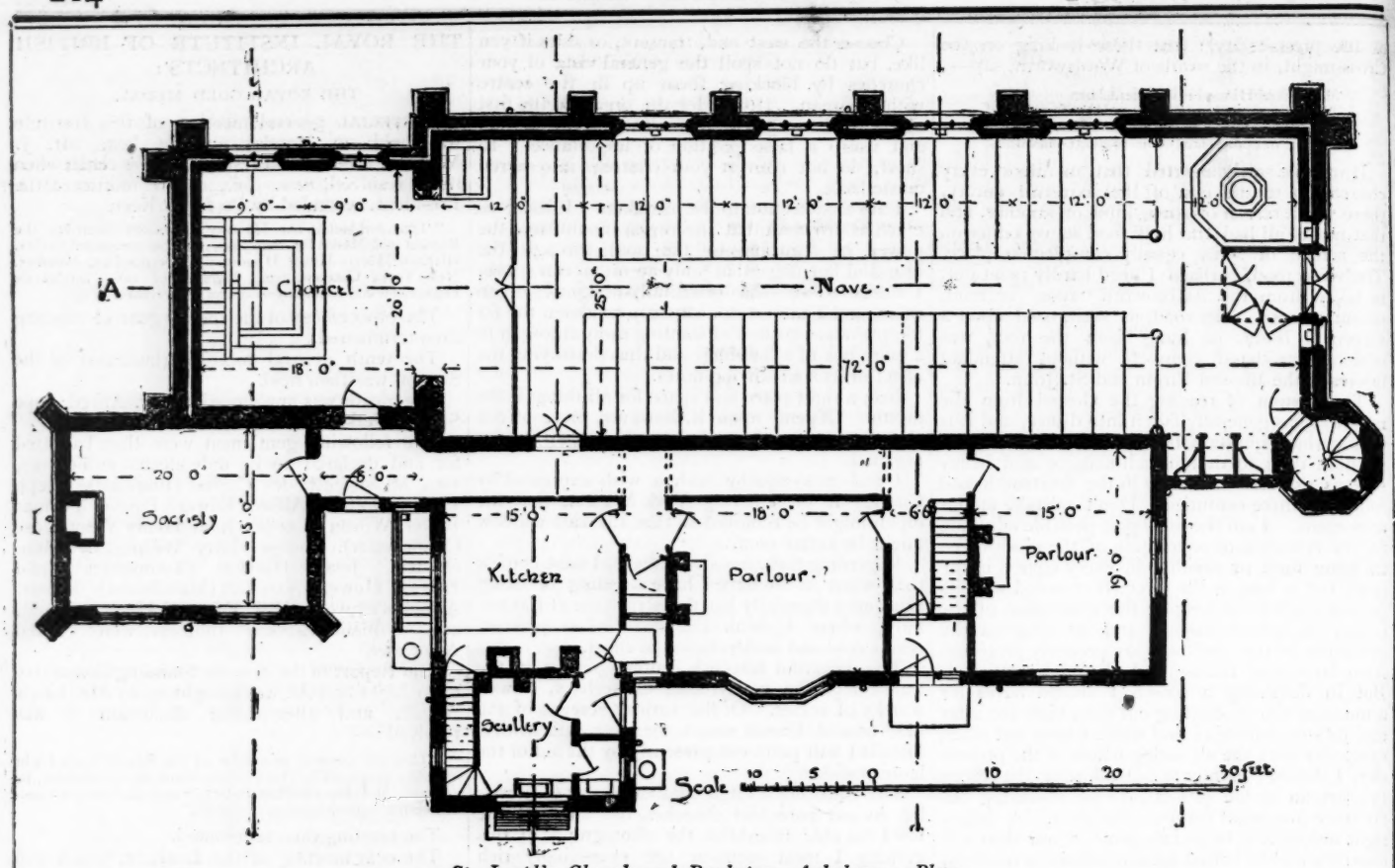
THE HAMPSTEAD SYNAGOGUE.

UNDER the guidance of Mr. Delissa Joseph, the architect, and Mr. F. T. W. Goldsmith, Honorary Secretary of the Association, a rather small party of members visited the new Hampstead Synagogue on Saturday last. The building has been erected in Dennington Park-road, on the site of Laurieston Lodge, and differs in several respects from the type of synagogue plan generally adopted in London. Instead of the usual cubiform building, the main structure is octagonal on plan, and an inner octagon is marked by the columns carrying the galleries and leading up to the dome which surmounts the central area.

The ark, the reader's platform, and the pulpit are grouped together at the east end of the building, thus following the Continental arrangement rather than that hitherto adopted in London. The choir is located behind the ark and screened by wrought iron grilles, which, in common with other wrought iron work in the building, is well designed and skilfully executed.

To the visitors, few of whom, probably, will ever be called upon to design a synagogue, useful hints were afforded by the provision made for the comfort of the worshippers in directions seldom studied by architects of churches and chapels. In the first place, ample cloak-rooms with lavatories are provided both for male and female worshippers, so that the inconvenience and unhealthiness of sitting in one's heavy out-door clothing is avoided. This, of course, necessitates ample room in vestibules and lobbies, a requirement well supplied in the Hampstead Synagogue. We noted, however, evidence of one inconvenience that the use of cloak-rooms is apt to produce in a notice on the door of the ladies' cloak-room that a certain garment had been taken by mistake by another than the owner.

The arrangement of the seats tends also to comfort. Each seat has a rising flap with a box underneath for service books, and the book-rests in front are hinged so as to lift, and thus increase the width of passage way. The provision of a



St. Joseph's Church and Presbytery, Aylesbury.—Plan.

book-box under the seat interferes, however, with kneeling, unless the distance from back to back is made very wide, so that comfort is obtained at the cost of devotion. Especially commendable is the ample provision made for exit, there being no fewer than seven entrances on the ground floor, which, it will be admitted, is sufficiently ample for a building of the maximum seating capacity of 700. This is indeed one of the striking features of the plan, the sense of spaciousness in the accessory portions of the edifice, the entrances, vestibules, and approaches.

The building being somewhat hemmed in by adjoining houses, the entrance front is the principal façade, and practically the only one of which any satisfactory view can be obtained. In character it is what a lay critic would probably call "heavy," that is, it is severe, dignified, and free from meretricious ornament or fussiness. We should decline to label the treatment as belonging to any past "style" of architecture, as it is entirely nineteenth-century in character, or feeling, or expression, call it what you will. This character is obtained by the use of red brick, simple circular headed openings, and a massive central tower. As a matter of taste, and admitting difference of opinion, we do not admire the very large window which occupies the upper part of the tower, and takes away from the expression of mass which the general proportions of the design of this feature suggest. Again, as a matter of taste, we rather question the finish of the interior of the building in unrelieved pure white. Our disinclination to admire the particular treatment of the design does not, however, prevent us from appreciating the character and individuality of the Hampstead Synagogue.

COMPETITIONS.

BATHS AND WASH-HOUSES, HACKNEY.—The Commissioners for Public Baths and Wash-houses for the Parish of St. John at Hackney invited seven architects to compete for buildings to be used for public baths, offering premiums for the three selected designs, the premium in the case of the architect employed to carry out the work to merge into the commission of 5*l.* per cent. Ten sets of designs were submitted. The Commissioners, with the assistance of their professional adviser, Mr. T. Thornton Green, F.S.I., unanimously selected the design bearing the motto "Compact," Scheme A (Messrs. Harnor & Pinches, Adelphi), for the first premium; the design "Otter" (Mr. F. J. Smith, Westminster), for the second premium; and the design "Practical" (Messrs. Spalding & Cross, Queen-street, E.C.), for the third premium. The designs will be on exhibition to the public this Friday and Saturday, March 17 and 18, from 12 noon to 9 p.m. each day.

BATHS AND WASH-HOUSES, KENSAL TOWN. Mr. H. Wright, the Clerk to the Commissioners for Public Baths and Wash-houses in the parish of Chelsea, informs us that the Commissioners have had under consideration the designs and specifications submitted to them in connexion with this competition, and that they have determined upon the designs for which the premiums agreeed upon will be given. It is added that "no mottos are yet known to the Commissioners, the designs being numbered only." The designs will be open to inspection by the public at the Town Hall, Chelsea, from Monday March 27, to Saturday, April 8, and at the Parochial Offices, Kensal-road, from Tuesday, April 11, to Tuesday, April 18, from 10 a.m. to 5 p.m.

KIRKSTALL ABBEY GROUNDS.—At a meeting of the Corporate Property Committee of the Leeds Corporation, on the 8th inst., plans for the laying out of the grounds adjoining Kirkstall Abbey were considered. Thirty-seven sets of plans were originally submitted. These were reduced to half-a-dozen by a sub-committee appointed for the purpose. The committee resolved to give the first premium of 20*l.* to Messrs. J. Cheal & Sons, landscape gardeners, of Crawley, Sussex, the carrying out of whose design will involve an estimated expenditure of 3,000*l.* The second premium of 10*l.* was awarded to Mr. T. H. Mawson, of Windermere.

BUILDING TRADES' EXHIBITION.—Some notes of this Exhibition, which was opened on Monday last (need we say in its usual state of unreadiness?) are unavoidably held over for want of space. The Exhibition will remain open until Saturday, March 25.

A TOWN BUILT UPON PILES.—Pnompenh, the capital of Cambogia, says the writer of "Notes from the Far East," in the fifteenth article of that interesting series, now appearing in the *Times* (see that journal for the 11th inst.), may be divided into three parts—the French town (which is on territory ceded to the protectorate thirty years ago), the native quarter, and the palace. The native town is entirely built upon piles, the river rising in flood time between 30 ft. and 40 ft. Upon the platform thus raised are constructed the thatched houses of palm leaves and bamboo, through the open windows of which the numerous inmates (for the Cambogians have large families) can be seen all seated on the floor—the position invariably assumed by the Cambogian when not afoot.

Illustrations.

CHURCH AND PRESBYTERY OF ST. JOSEPH, AYLESBURY.

THE site of this building is one of the best in the market town of Aylesbury. The church is to be of red brick, with stone dressings; the nave will have an open timber roof of the hammer-beam type, and the chancel a semi-circular panelled one, covered with Westmoreland slates.

The walling of the presbytery is of red brick up to the level of the first floor, and from this to the eaves of yellow-tinted rough cast. The roof is covered with the local red tiles. The interior is treated like the more simple of the town houses of the early part of the eighteenth century, with plain panelling and wooden chimney pieces. The staircase has carved cantilever ends to each stair, and turned balusters.

The whole of the floors of church and the ground floors of presbytery are of wood blocks.

The work has been carried out by Messrs. Webster & Cannon, from the designs of Messrs. Goldie, Child, & Goldie.

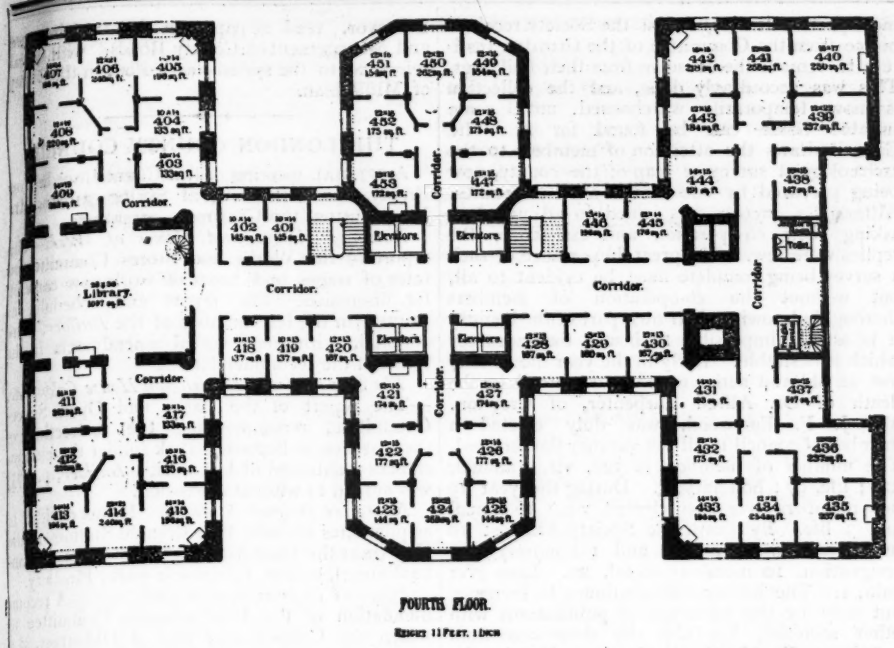
THE "EQUITABLE" BUILDING, DENVER, COLORADO.

THIS building, which is one of the largest and finest office buildings in the West of the United States, was erected in 1891-2 for the Equitable Life Assurance Society of New York. The building is nine stories in height, and has a lofty basement, which is arranged to accommodate a Safe Deposit Company.

The materials of the exterior are a pinkish grey Colorado granite, which extends through the first two stories; the walls above are of straw-coloured bricks, and the cornices, balconies, sills, and lintels of white terra-cotta. The building is stated to be as absolutely fire-proof as modern science can render it. It is served by eight rapid elevators; one of which runs to the elevated central platform of the roof, from which point one may follow the sweep of the Rocky Mountains for 150 miles.

The greater part of the plumbing work is concentrated upon the eighth and ninth floors; but in addition to the public service there are additional lines of supply which will enable several different suites of offices on each floor to have its own plumbing service if desired. The building is heated by direct steam radiation, and completely furnished with electric lights, the power for which is supplied from a special plant in the basement.

The main corridors and hallways of the ground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position it occupied in the old building of which it formed part. There was not so much architectural history in the building as in many cathedrals, and this was to be accounted for by the energy of Bishop Clemens, the moderate size of the structure, and its situation on the high road between Stirling and Perth. The west door, the absence of tracery in some of the clearstory windows of the nave, the comparative smallness of the chancel aisle arch and the presence of two openings above it, the blank wall on the north side of the choir, and the long apartment on the north side of the choir were points referred to by the lecturer. Mention was also made in the same connexion of the vesica window in the west wall of the nave. In restoring the cathedral to a condition in which it could be used for its original purpose as a place of worship, Dr. Anderson emphasised this, that he had only repaired and renewed where such was structurally necessary. The wall-heads had been made secure. The whole of the building had been roofed, the tracery of the nave windows had been renewed where necessary, the masonry blocking up the chancel-aisle had been removed, the windows had been glazed, and, following out the principle of not repairing or renewing except where structurally necessary, the west door, still beautiful, though dilapidated, had been allowed to remain untouched. Mr. Hippolyte J. Blanc proposed a vote of thanks to Dr. Rowand Anderson for his paper, which the Rev. Mr. Ritchie, Dunblane, seconded. The paper was illustrated by a series of limelight views, showing the building as it was and as it now is.—On the 11th inst., the members, under the leadership of Mr. Hippolyte J. Blanc, A.R.S.A., visited Corstorphine Kirk and Beechwood House, Murrayfield.

GLASGOW ARCHITECTURAL ASSOCIATION.—The annual business meeting of this Association was held in the Rooms on the 7th inst., the President in the chair. The Committee's report was submitted and adopted. It showed the work of the past session to have been very successful. Reports were also submitted by the Treasurer and Librarian, and these were likewise adopted. The following gentlemen were elected as office-bearers for the coming session:—Hon. President, Mr. Campbell Douglas, F.R.I.B.A.; President, Mr. Alexander M'Gibbon, A.R.I.B.A.; vice-president, Mr. Alex. N. Paterson, A.R.I.B.A.; hon. secretaries, Mr. John White, Mr. Walter Watson; hon. treasurer, Mr. Hugh Dale; hon. librarian, Mr. W. Tait Conner, A.R.I.B.A.; general committee, Mr. Robt. J. Gildard, Mr. Andrew Robertson, Mr. John Arthur, Mr. Wm. Fraser, A.R.I.B.A.

ARCHITECTURAL SECTION OF THE GLASGOW PHILOSOPHICAL SOCIETY.—The monthly meeting of the Architectural Section of the Philosophical Society of Glasgow was held in the upper hall, 207, Bath-street, on Monday last, Mr. Campbell Douglas, the President, in the chair. Mr. Buchan gave a paper on "Ventilation." A vote of thanks was awarded to the lecturer.

ARCHÆOLOGICAL SOCIETIES.

SURREY ARCHÆOLOGICAL SOCIETY. — The annual general meeting of this Society was held on Wednesday afternoon last, at No. 8, Dane's Inn, Strand, the President, Viscount Midleton, in the chair. The thirty-eighth annual report detailed the various excursions and meetings held by the Society during the past year, and stated that the Society's publication has been kept up to date, the first part of Vol. XI. having been issued in August last, and the second part of the same volume is well in hand, for distribution during the year 1893. The Calendar of Feet of Fines for the County is all set up in type, and only waits the completion of the index. This has been a very laborious undertaking, and the council expresses its indebtedness to the editor, Mr. F. B. Lewis, for his painstaking endeavours to render the Calendar as complete as possible. The recently published Calendar of the Feet of Fines for London and Middlesex contains many entries for the county of Surrey, and taken in conjunction with the Surrey Calendar will place a large amount of material at the disposal of all students. The Surrey Calendar will be ready for distribution early in the summer. The Catalogue of the Church Plate of the County is making steady progress in the able hands of the Rev. T. S. Cooper, one of the honorary secretaries. Although up to the present no pre-Reformation example has been found in the county, the series of Elizabethan cups is very striking. The Visitation of Surrey is at last approaching completion, and the editors have every hope of finishing it in two more parts. In August last the Society received notice from the Committee of the Croydon Institute to remove the Museum from their buildings. This was accordingly done, and the collection is now temporarily warehoused until some suitable home can be found for it. The Council draws the attention of members to the archæological survey or map of the county, now being prepared by one of the hon. secretaries. Although a circular was issued to all members asking their co-operation and assistance, the replies were few. The great importance of such a survey being complete must be evident to all, but without the co-operation of members thoroughly knowing their own part of the country it is almost impossible to insure that accuracy which is desirable. Early in the year the Society lost an old and active member of council by the death of Dr. Alfred Carpenter, of Croydon. Mr. J. F. Eastwood, was duly elected a member of council to fill the vacancy thus created. The number of members is 320, viz.: annual, 220; life, 97; honorary, 3. During the year 19 new members have been elected, viz.: 16 annual and 3 life. By death the Society has lost 10 members, viz.: 9 annual and 1 honorary; by resignation. 10 members—total, 20. Loss over gain, 1. The library still continues to increase, not only by the exchange of publications with other societies, but also by donations from members. To Mr. S. W. Kershaw, F.S.A., the Society is greatly indebted for a most valuable gift of books in memory of his brother, the late Dr. W. W. Kershaw. This generous gift makes the Society in possession of a complete set of the *Journal of the Royal Archæological Institute*. The Society was again represented at the fourth Congress of Societies in union with the Society of Antiquaries of London. After payment of all outstanding liabilities, there remains a balance on the year's expenditure. The total reserve fund now amounts to over £400.—The report was adopted, and it was unanimously resolved "That the debt of £95 now owing to the reserve fund, on behalf of life compositions, be cancelled." Mr. Mill Stephenson, B.A., F.S.A., and the Rev. T. S. Cooper, M.A., were re-elected hon. secretaries; Mr. W. F. Potter was re-elected auditor; and Mr. Wren was appointed auditor in place of the late Mr. Pope, with whose family a vote of condolence was passed.

ENGINEERING SOCIETIES.

LIVERPOOL ENGINEERING SOCIETY. — On Wednesday evening, the 8th inst., Professor H. S. Hele-Shaw, M.Inst.C.E., read a paper before the members of the Liverpool Engineering Society, entitled "The Graphical Method of Solving Engineering Problems." The first portion of the paper pointed out the considerably increasing use that is being made of graphic methods in engineering text-books and journals, and drew attention to the peculiar advantages of this method, both for solving problems and representing facts. After certain preliminary definitions, a reservation was made of the use of only two dimensions of space which was quite sufficient for the engineer in designing structures and machines. It was then pointed out that a very large proportion of graphical statements take the character of either Cartesian (sometimes called the linear) diagrams or of polar diagrams. These kinds of graphical statements, given by such plotted or automatically-recorded curves, were nothing more than graphical tables of numerical results, which have the great advantages of exhibiting at a glance the general nature of the facts and taking a practically unlimited number of points on such a continuous curve. Attention was then called to the class of graphical statements which do not take the form of a continuous curve, and to the graphical modes of operation which correspond to arithmetical or algebraical operations. Coming to the actual mode of graphical operation, the author said that we may place first and foremost, in utility, simplicity, and frequency of employment, the method of "interpolation," which merely consists in finding from any graphical statement in the form of a continuous curve an intermediate value by drawing a line at the point required, as, for instance, to find the pressure in an indicator diagram at any given stroke. The actual graphical operations other than the mere construction of linear and polar diagrams were then considered at some length.

EAST OF SCOTLAND ENGINEERING ASSOCIATION.—On the 14th inst. the seventh meeting of the session of the East of Scotland Engineering Association was held at No, 5, St. Andrew-square, Edinburgh, Mr. James Massie, President, in the chair. Mr J. Robb, Assistant County Surveyor, read a paper on the "Maintenance and Management of County Roads," with special reference to the system carried out in the County of Midlothian.

THE LONDON COUNTY COUNCIL.

A SPECIAL meeting of this Council was held on Friday, the 10th inst., at Spring-gardens, Mr. John Hutton, the Chairman, presiding.

Rates of Wages and Hours of Work.—The report of the Works and Stores Committee on rates of wages and hours of work now came up for discussion. The report and schedule, as printed in the last number of the *Builder*, were adopted, with some verbal amendments in the terms of the recommendation.

The Stones of the Burlington House Colonnade.—The report of the Parks and Open Spaces Committee, recommending the re-erection of these stones in Battersea Park (under the circumstances mentioned in last week's *Builder*, p. 195) was agreed to without discussion.

New Fire Brigade Stations.—It was decided to acquire sites for new Fire Brigade Stations in the City (near the Blackfriars end of the Victoria Embankment), and in Tabernacle-walk, Finsbury.

Proposed Improvement in Old-street.—A recommendation of the Improvements Committee to widen the Goswell-road end of Old-street, at a cost of £141,800, was defeated by an amendment (moved by Mr. Hubbard) expressing inability to proceed with the work "pending an alteration in the incidence of taxation."

The Blackwall Tunnel.—The consideration of a long report dealing with the question of suggested alterations in the mode of carrying out some portions of this work was deferred until Tuesday next, March 21.

The ordinary weekly meeting of the Council was held on Tuesday last, Mr. Evan Spicer (Chairman of the Finance Committee) presiding in the first instance.

Re-election of Chairman, Vice-Chairman, and Deputy-Chairman.—On the motion of Lord Carrington, seconded by Mr. John Burns, Mr. John Hutton was re-elected Chairman of the Council. Having taken the chair, he returned thanks, and Mr. Charles Harrison and Mr. W. H. Dickinson were re-elected as Vice-Chairman and Deputy-Chairman respectively.

Alexandra Palace and Park.—The Parks and Open Spaces Committee reported that they had considered the present proposals of Mr. Littler, Q.C., and the Middlesex County Council, to the effect that the Alexandra Palace and Estate, 36 acres in extent, should be purchased for 275,000*l*. The Council's Valuer, however, estimated the full value at a much less sum, and if the restriction as to building remained the value would be still further reduced. The position was represented to be that Middlesex would contribute 30,000*l*., Hornsey 25,000*l*., and Wood-green, Friern Barnet, and Finchley a sum which will bring up the total amount promised to over 70,000*l*. Mr. Littler proposed that the Council should contribute 120,000*l*., and if that were secured he stated he had no fear of the balance not being forthcoming from voluntary aid and from the City companies. The Committee, after considering the whole circumstances, were of opinion: (*a*) That the acquisition of the palace and grounds would not benefit the inhabitants of the County of London to such an extent as to justify the proposed outlay; (*b*) That the proposed system of joint management is open to considerable objection, and is a system in which the Council could not be advised to acquiesce; (*c*) That the price asked for the palace and grounds is excessive. They recommended:—

"That the Council do not contribute towards the cost of acquiring the Alexandra Palace and grounds."

The recommendation was adopted without discussion.

After transacting other business the Council adjourned.

REGISTRATION OF PLUMBERS. — At the last meeting of the Registration Committee of the Hull District Council for the National Registration of Plumbers it was resolved that the next examination of the students attending the local plumbing classes should be held at Hull on Tuesday and Wednesday 28th and 29th inst. It was also resolved that, subject, to a sufficient number of candidates applying, an examination of applicants for registration should be held on April 8, and that the same should be advertised in the local press. It was remitted to the secretary to make the necessary arrangements for the exhibition of the work executed by the students of the plumbing classes.

Correspondence.

To the Editor of THE BUILDER.

ARCHITECTURAL PAPER WARFARE.

SIR,—It is difficult for the ordinary man, whose time is greatly occupied by the practical needs of life to spare the time to follow all the papers and articles by which we are now being instructed how to practice architecture, but I think he gathers enough from his cursory observation to arrive at the conclusion that the architects of the latter half of the nineteenth century are very odd people.

We have all one object. That, I suppose, is admitted. We all love our art—or pretend to—and are anxious to advance its interests by every legitimate means. Most of us are ready to admit that the average condition of architecture of the present day is hardly calculated to invoke the enthusiasm of other countries, and we each have our pet panacea for putting things straight. These vary in degree from the cultivated artist, who chafes under all restraint and who objects to the Institute and all its works, to the practical person who hopes to find artistic England in the folds of an Act of Parliament. These various schools of thought are very indignant with one another and spend their time in formulating charges of great import, which they periodically deliver with a serious effort at impressive solemnity.

Now this state of things may gain for many of the eminent gentlemen who take part in it a brilliant reputation as accomplished tacticians and debaters, but do they consider that they are conscientiously discharging their duties as leaders of the architectural thought of to-day? I sometimes think when contemplating some beautiful work of the past, how much grander and nobler it is because of the absolute silence of its author. I suppose this must be ascribed to the want of facilities for publishing his views, but I doubt whether we should respect the architects of the Parthenon or York Minster any more if there were preserved from their hands a passionate attack or defence as to the propriety of an examination for architectural students.

The objections to this wordy warfare would be lessened if it were to lead to any practical end, but I would venture to submit that so far its only result has been to bewilder the student, to annoy the architect, and to afford the public opportunity for amusement. I confess I cannot see where it is going to benefit our art.

To hope to suggest a way of peace is, I am afraid, far too ambitious a dream for a humble individual like myself; but if I might venture to express in words a few of the current notions among the younger men with whom I have discussed the question, I may, perhaps, be pardoned my presumption.

Take one question—the attack on the Institute. What is the object of this? The Institute may, perhaps, not be the altogether perfect assembly that we might desire, but are we likely to change its policy by standing afar off and saying cutting things about it? The Institute is, after all, merely a collection of individuals, and these individuals by no means all think together. There are many members, more especially among the younger members now joining, who are mainly in sympathy with the Memorialists, but how can they hope to materially influence the policy of the corporate body, when the men who have earned their respect from the high quality of their work, and whom they are ready to follow, stand icily aloof.

Then there is the attack on the Examinations. Do the Memorialists fully realise the strength of the prejudices they have to overcome when they cry out against examination? They are contending against the young eager desires of the students who come to the study of their art with all their school and family traditions in favour of examination, and who, if they have any pluck in them, will not hesitate to present themselves for the ordeal whatever the Memorialists may say. If the preparation for the Examinations as they are at present constituted encourages academical methods of thought, and so tends to push on one side that earnest study of the handicrafts which many believe to be essential if the architect is to be really loved and respected by his workmen, so much the worse for architecture. It may seem a hard thing to charge the Memorialists with impeding the progress of our art by their singular course of action, but that view is held and is extending among those who are otherwise in entire sympathy with them.

On the other hand, there are many signs that the impatience in the Institute as to its policy of admitting any respectable father of a family is spreading silently and slowly, and that a feeling is growing up that the character of the present examination is too academic. It is felt that it somewhat tends to encourage the production of gentlemen who are competent to carry on learned discussions on the Hypæthral Temples of the Ancients, but who are not equally able to enlist the sympathies and call out the best efforts of the mechanics working out their designs. The idea that architects should be architects in reality as well as in title is a favourite among the younger men, and it is felt that this will mean a more intimate connexion and feeling of mutual respect between the architect and the workman than is possible under existing conditions.

But any ideas or aspirations we may have, whether members of the Institute or not, may as well be frankly set aside while these trying discussions are proceeding; and I would venture to appeal to those who are carrying them on, to consider how greatly they are injuring our art by their action, and to see if they cannot find some common ground whereon efforts may be concentrated for a united and determined onslaught on the inartistic building which is disfiguring every city and town in the kingdom.

London, March 3. OWEN FLEMING.

THE INSTITUTE AND TERRA-COTTA.

SIR,—I had hoped that in your issue of the 4th inst. someone would have taken up the discussion commenced on the previous Monday evening at the Institute. The onslaught upon the Institute itself in an article which recently appeared in the *Quarterly Review*, which, with its attempt to deride the works of one who has but recently vacated the highest office of the Institute, coupled a diatribe against the material so extensively employed by him, surely rendered the consideration of the merits of terra-cotta by the Institute itself a matter of serious moment. It is to be regretted that the discussion was not adjourned to another evening. No doubt many others, like myself, attended the meeting in the hope (as expressed by Colonel Edis) that we might take part in a quiet debate upon new ways of using this valuable material, rather than to listen to a paper (Mr. Stokes's) which savoured so strongly of the ungenerous sentiment and disrespectful comment of the article before referred to, as to suggest a common origin. Failing that, I now write to ask that an exchange of views on the question may find a place in the columns of the Press devoted to matters of architectural interest.

I wish to say that in my estimation terra-cotta possesses so many advantages, both artistic and practical, that I consider it one of the most distinctive materials available at the present day. But I make a broad distinction between the terra-cotta available to-day and that made twenty years ago; the enormous difference between the two seems to be ignored both by Mr. Stokes and Mr. Brydon. Within that period many defects of the material, which were then only too palpable, have been remedied by attention to the details of manufacture, and by assiduous study of the nature of the material by the architects who have used it.

We have now before us, if we choose to avail ourselves of it, a material which is of the greatest value to the architect who aims at individuality in his work, which individuality can best be made evident in the details of his work.

In endeavouring to embody in our work our ideas of detail, how often are our good intentions thwarted by the ever-recurring consideration of expense? So much so that our ideals are but seldom realised. Should we not therefore welcome any material which lends itself so readily to the expression of our individuality? Of course, in using this or any other material, we must keep our imagination within due bounds and exercise proper restraint; otherwise we shall drift into those excesses which have brought about the downfall of every style and phase of art in the world's history.

The limitations placed upon us, especially in large towns, make it impossible for us to attain picturesqueness in the ways of the past, nor can we adopt the methods and materials then in vogue, when sites were ample and restrictions almost unknown. Those who build to-day do so under entirely different circumstances, in the majority of cases for clients having commercial interests which may not be ignored, so that we have to face increased difficulties in conceiving designs which shall satisfy the cumulative conditions imposed upon us.

Obviously, then, we must have many modifications of the older architectural forms, and I suggest that it is wise to soften these departures by associating them with an entirely new material, rather than to accentuate them by their execution in materials which have their orthodox forms.

I do not know of any material which lends itself so happily to the presentation of such old forms as must be retained side by side with newer ones than terra-cotta. Neither do I think the question of the advisability of using that material is disposed of by an inquiry into its capability to outlast stone or the reverse. The false conditions thrust upon the material by those who have looked upon it simply as a substitute for stone and judged it by its approximation to that material have much to do with the qualified results which are to be found by assiduous searchers like Mr. Stokes. But he forgets or is ignorant of the fact that many of the solecisms of which he and others complain are due in a great degree to conditions forced upon the pioneer users of terra-cotta by unappreciative manufacturers—conditions represented by clamour for the design to be brought to the material rather than the material to the design.

Such conditions are now happily modified, and it rests with the architects of to-day to reap the full benefit of their removal.

My own feeling is that one of the greatest advantages to be obtained by the use of terra-cotta is the soft light and shade—the mezzotint as it were—resulting from the employment of detail, which, whilst elaborate enough to give enormously increased interest to a building when looked at at close quarters, does not interfere with the general breadth of effect at a distance.

I fancy some mistake has been made in translating "facility of production" into "facility for *reproduction*." Facility means that the scale of detail becomes of less import so far as cost is concerned, and it becomes possible in using terra-cotta to introduce detail of delicacy and refinement, the cost of which in stone would be absolutely prohibitive.

For these reasons, if for no others, I think terra-cotta is a material which merits the best consideration at the hands of those who have to grapple with the conditions of to-day, and I trust that the examples of its happy utilisation by such architects as Mr. Webb, Mr. Bell, and Mr. Collcutt, will far outweigh the deprecatory remarks of those who are anxious to strike through the material at the users of it, and through them at an institution of which I am proud to be a member.

H. HUNTLY-GORDON.

TERRA-COTTA AND STONE.

SIR,—With reference to the report of the recent meeting of the R.I.B.A., as printed in your issue of the 4th inst., at which papers were read, and a discussion subsequently ensued respecting the above, I think the thanks of the Portland stone quarry owners are due to Mr. Leonard Stokes (principally) and Mr. J. M. Brydon (who also on February 6, 1891, in his paper entitled "English Renaissance of the 18th Century," read before the above-named Institute, when alluding to Somerset House, spoke well of our—as he then termed it—"noble stone") for the good defence they made for Portland stone.

At the same time, as some able representatives of the terra-cotta industry were permitted to be present, and reply to the criticisms passed upon their manufactures, and Portland stone was not allowed to pass without criticism, I venture to respectfully suggest that another time the Institute might see their way to honour some of the representatives of the Portland (or other stone trades) with an opportunity of attending, and thus be able to reply to the criticisms which may be passed upon their products. Colonel Edis and Mr. Aston Webb were able to mention one building each that was erected some decades of years ago out of Portland stone, that is showing some signs of decay; and possibly had a representative of the Portland stone industry been present, he might have been able to suggest a cause for the above failures (although a century is a good innings for Portland stone, if terra-cotta is stated by Mr. Stokes to have decayed in ten years—especially if their first cost is equal—for Portland stone thus being proved to be ten times as durable, is worth as many times as much, instead of the same amount only). For instance, in a certain Midland city some few years since, Portland stone was said, to my surprise, to be rapidly decaying, and only terra-cotta could stand the acid atmosphere of this place; but I directed a practical man who had assured me of the failure of Portland stone to go and visit a certain important building erected of stone from some of my quarries (then the property of my predecessors) some twenty-seven years ago, and, after some delay, he wrote me as follows:—

"I am sorry I have not had time to go and inspect the . . . . until yesterday, when I went and had a thorough good look round, and am glad to say I found the stone had stood remarkably well; there is not the slightest sign of decay—in fact, every edge, and mitre, and moulding is as sharp and as good as when new."

Now this building was erected of stone from some fresh quarries here in the island, which had not been greatly worked, and the success of the stone from that quarry against the failure of stone from others, shows that if a quarry-owner is permitted to send to a town just the particular sort of stone his knowledge of his material and of the atmosphere of the place where the stone is to be erected may suggest as being the right sort, even the few failures which Colonel Edis and Mr. Webb criticised may be minimised, if not effaced. As in Bath and York stones, so in Portland, there are several districts in the island (true, not very widely separated), producing stone varying very greatly in quality, some of which is undoubtedly the best for some towns and some for others, but very generally we find Portland stone specified broadly as such, when, as a consequence of no stone from any particular group or district being specified, a mixture is sometimes ordered (possibly intentionally by the manipulators at the other end), or if discretion is used when ordering, possibly the wrong sort is ordered, and being ordered is sent, hence a failure is the result of what might otherwise have been an unqualified success.

F. J. BARNES.

Portland Stone Quarries.

P.S.—Another explanation of the very rare occasions upon which Portland stone fails is to be found in a circumstance which has just now occurred, viz.,—I have been supplying the stone for a certain important building in the Midlands, and I have sent into that town just that sort of stone which I was satisfied in my own mind would be most suitable for its atmosphere; but my customers insisted upon having, and are now using, stone from another bed in another part of the island; hence, in

such instances, Portland stone merchants are powerless to prevent what they may beforehand feel assured must be a failure sooner or later.—F. J. B.

THE MANCHESTER CATHEDRAL CONTROVERSY.

SIR,—The temperate tone of your Note in the *Builder* on the Manchester Cathedral controversy is a refreshing change after the personalities of my critics in the *Manchester Guardian*. The writer of your Note, however, regrets a certain carelessness as to facts on my part. I take leave to point out that, with one exception, Mr. Oakley has not established the inaccuracy of any of my statements.

Mr. Oakley pointed out that I was in error in regard to the Fraser Chapel, an error into which I was led by a photograph of the church taken previously to the latest restoration, and by what I think must have been an inaccurate plan given in the latest published account of Manchester Cathedral. This error I admitted at once, giving the authorities on which I had based my criticism. With this exception, not a single one of my criticisms has been disproved. Mr. Oakley attempted to prove that I had been hopelessly wrong in regard to the quarries. He made out that a diamond-shaped quarry, measuring 4 × 3 from point to point of centre of cames, if multiplied by 8, produced a quarry 2 ft. 8 in. high. I set this quarry out full size, and multiplying it by 8, I found its area came to 50 square inches; that is to a quarry 8 in. by 6¼ in., the exact size I had in view.* So far from my having been inaccurate in regard to facts, the gravamen of misrepresentation is against the other side. Mr. Oakley, as I have pointed out in the *Manchester Guardian*, misrepresented my statements. This may have been due to a misapprehension, or to a pardonable zeal in defence of his old master. Mr. Oakley at least wrote in a reasonably temperate manner, but most of the other writers to the *Manchester Guardian*, when they were not misquoting my statements, were making a furious outcry at the presumption of any criticism of that sacred monopoly, the work of the architectural profession. One person, who concealed his identity under the title of "Not a Manchester Architect," made the deliberately false assertion that I had been wrong in five specific points, and he based his abuse on the fact that I had not "restored" so many churches as Sir Gilbert Scott and other eminent performers in the process of obliterating national history. Your contributor may have been misled by the fact that I did not think it worth while to reply to this abuse; but as the reproach of carelessness has been brought against me in the columns of the *Builder*, I am driven, in self-defence, to ask you to insert this contradiction on my part, a contradiction which I think will be confirmed by any competent person who tests my statements by an independent examination of Manchester Cathedral. The various "restorations" of the Cathedral carried out in this century have reduced the building to a condition of absolute illegibility, and the object of my criticism was to direct public attention to the injury which is everywhere, and all over England, being inflicted on what must now be considered as national monuments by the zeal of ill-instructed piety.

REGINALD BLOMFIELD.

RE SMITH MEMORIAL, ST. MARGARET'S, WESTMINSTER.

SIR,—In your notice of this work last week I find I am credited with the whole of the work on the glass. This is, however, hardly correct, as Mr. L. Jacques executed the principal portion of the painting under my direction, &c.

The mistake has arisen, I expect, from the description furnished you.

HEN. G. MURRAY.

The Student's Column.

CHEMISTRY.—XI.

Hydrochloric Acid. HCl.

HYDROCHLORIC acid is one of the most common and most important of the commercial acids. It is known also as *spirits of salt*, as *muriatic acid*, and as *hydrogen chloride*. The name "spirits of salt" was probably obtained from the fact that it is prepared by heating common salt with sulphuric acid and is evolved as a vapour or gas.

Hydrochloric acid is used in very large quantities for the preparation of bleaching powder and for other chemical manufactures, and also as a solvent for many of the metals.

It is a colourless, irritating, strongly acid gas which fumes considerably in moist air. It is very soluble in water, and the solution thus formed constitutes the hydrochloric or muriatic acid of commerce.

A saturated solution of hydrochloric acid in water has a specific gravity of 1·21, and contains about 42 per cent. of true HCl. The strength of the acid solution, however, varies with its temperature and with the atmospheric pressure.

A mixture of hydrochloric acid with nitric acid is known as *aqua regia*, and is used as a solvent for gold and platinum, which are unaffected by either acid if used separately.

Hydrochloric acid may be obtained by mixing equal volumes of hydrogen and chlorine, and exposing them to diffused daylight, when they become chemically combined. If exposed to too strong a light, the gases combine so rapidly that violent explosion occurs.

The acid is, however, usually prepared by heating common salt (sodium chloride) with sulphuric acid.

If the temperature to which these substances are heated is comparatively low, the reaction which takes place may be expressed thus:—

$$NaCl + H_2SO_4 = HCl + NaHSO_4.$$

If the temperature employed is great, the reaction occurs in two stages thus—

(1) $NaCl + H_2SO_4 = HCl + NaHSO_4$

(2) $NaHSO_4 + NaCl = HCl + Na_2SO_4$

but may be expressed in one equation, thus—

$$2NaCl + H_2SO_4 = 2HCl + Na_2SO_4.$$

Most of the acid of commerce is obtained from these materials, as a bye-product from the manufacture of sodium carbonate, thousands of tons being manufactured every week in England alone. The commercial acid, however, is always impure, containing iron as ferric chloride, arsenic as arsenious chloride, and sulphuric acid. It may, however, be purified by simple distillation.

Experiments. Group 7.

1. Prepare some chlorine gas.

Fit up an apparatus as shown in Fig. 11. Put about an ounce of black manganese dioxide into the flask, and pour upon it enough strong hydrochloric acid to thoroughly moisten it. Upon gently heating the mixture, chlorine gas will be rapidly evolved, and being heavier than air, may be collected as shown in the figure. The jars may be considered filled when a wet litmus paper held over the mouth of the jar is bleached. There is, of course, always a little air present when the gas is collected in this manner, but that does not affect most of the experiments. If preferred, the gas may be collected over water in the usual way, provided that the water employed is as hot as the hand can bear. The gas is very considerably soluble in cold water. Avoid inhaling the gas.

With the gas thus collected prove—

(*a*) That chlorine will not bleach in the absence of water, by placing a piece of dry red cloth or a bunch of violets in a jar of the gas. The colour of the cloth or violets will be almost unaffected. Now wet them and again plunge them into the gas, and they will be rapidly bleached.

(*b*) That chlorine will readily combine with metals in a fine state of division, by dropping some powdered antimony or a leaf of Dutch metal into a jar of the gas. The metal will combine so rapidly with the chlorine that the heat of combination will cause the metal to ignite.

(*c*) That chlorine readily unites with hydrogen to form HCl, by moistening a strip of blotting-paper with turpentine and plunging it into the gas. The heat produced by the rapid combination of the hydrogen of the turpentine with the chlorine is so great that the paper and turpentine will burst into flame. The carbon of the turpentine will be liberated as dense volumes of smoke.

2. Prepare hydrochloric acid.

In a flask fitted in a similar manner to that employed for making chlorine, place about 3 parts by weight of common salt to 5 of strong sulphuric acid. Heat gently on a sand bath or piece of wire gauze. A colourless gas will be evolved, which, being heavier than air, may be collected in the same manner as chlorine. It is, however, more convenient to pass it into water, and thus form a solution of hydrochloric acid. Prove that the gas or solution obtained possesses the properties of HCl.

3. Place some bleaching powder in a beaker, and pour upon it a few drops of hydrochloric acid. Prove that chlorine gas is evolved.

Symbol S. *Sulphur. Atomic Weight* 32.

Sulphur is an element which is found in a free state in volcanic districts. Most of the sulphur used in this country comes from Sicily and Italy. It is found as a matrix with rock salt and gypsum, and is separated from these by simply melting it out. Sometimes the sulphur is poured while in a liquid condition into tubular moulds, and then forms, when cool, "roll sulphur" or "stick sulphur." Sulphur is purified by heating it until it vaporises and allowing the vapour to pass into a large brick chamber, in which the sulphur condenses out as a fine powder, and is sold as "sublimed sulphur" or "flowers of sulphur." Combined with metals, sulphur is found as *sulphides*, thus iron pyrites (FeS_2) is a sulphide of iron, and galena (PbS) is a sulphide of lead. In combination with metals and oxygen, sulphur occurs as sulphates—*e.g.*, gypsum or calcium sulphate ($CaSO_4 + H_2O$). In the gaseous condition sulphur is found combined with hydrogen as sulphuretted hydrogen (H_2S), and with oxygen as sulphur dioxide (SO_2) in volcanic regions. Sulphuretted hydrogen is sometimes found dissolved in mineral waters, as at Harrogate. In small quantities, sulphur is found in many organic substances, such as eggs, garlic, coals, onions, oil of mustard, &c.

The blackening of silver spoons by eggs is due to the action of the unoxidised sulphur, a black sulphide of silver (Ag_2S) being formed.

By exposure to the atmosphere of towns in which much coal is burnt, silver rapidly blackens on account of the action of the sulphuretted hydrogen upon it.

Sulphur, like carbon, may be obtained in three allotropic modifications.

Ordinary sulphur is practically insoluble in water, but dissolves readily in bisulphide of carbon, or in turpentine.

Only two oxides of sulphur are of any importance commercially, viz., sulphur dioxide, SO_2, and sulphur trioxide, SO_3. Each of these will combine with water to form an acid, thus:—

$SO_2 + H_2O = H_2SO_3$ or sulphur*ous* acid.

$SO_3 + H_2O = H_2SO_4$ or sulphur*ic* acid.

Sulphur Dioxide. SO_2.

When sulphur is burnt in air or oxygen, it burns with a blue flame, and produces a colourless gas termed sulphur dioxide or sulphurous oxide. One of the most convenient methods of preparing it, however, is to decompose sulphuric acid by heating it with a metal, thus:—

$$Cu + 2H_2SO_4 = SO_2 + CuSO_4 + 2H_2O.$$

Sulphuric acid and metallic copper when heated together yield sulphur dioxide, copper sulphate, and water.

Sulphur dioxide has a very irritating and suffocating odour. It is very soluble in water, and forms with it, as shown above, an acid, termed sulphurous acid. H_2SO_3.

Sulphur dioxide possesses bleaching properties, and is usually employed for bleaching materials that would be injured by chlorine—such, for instance, as wool, silk, straw, or flannel. It is also used as an "antichlor" for removing the last traces of chlorine from materials which have been bleached by that element. The action of the sulphur dioxide may be expressed thus:—

$$SO_2 + 2H_2O + Cl_2 = H_2SO_4 + 2HCl.$$

The preparation and use of sulphur dioxide as a disinfecting agent has been described in a previous paper.*

Sulphur Trioxide, SO_3.

Sulphur trioxide is a white or colourless crystalline solid. It can be prepared by passing dry sulphur dioxide and oxygen together over heated, finely-divided platinum.

Sulphur trioxide does not redden blue litmus paper, but when brought in contact with water, the two substances combine with great violence, forming an intensely acid solution known as sulphuric acid.

Sulphuric Acid, H_2SO_4.

This acid is commonly called "oil of vitriol." It is used, directly or indirectly, for almost every chemical manufacture; consequently the quantity manufactured per week in the United Kingdom is enormous.

The acid is prepared by bringing into contact—

(1.) Sulphur dioxide (2.) Air (3.) Water vapour (steam) (4.) Nitric acid vapour	which result into	dilute sulphuric acid. nitrogen. nitrogen trioxide.

The whole process depends upon the fact that although SO_2 will not combine to any appreciable extent with free oxygen and water to form sulphuric acid, it is capable of abstracting oxygen from nitrogen trioxide (N_2O_3) to form the acid, in the presence of water, thus—

$$SO_2 + N_2O_3 + H_2O = H_2SO_4 + 2NO.$$

(nitric oxide)

The nitric oxide formed by this reaction imme-

* Mr. Blomfield will find that he has made some mistake here. The area of a symmetrically-shaped diamond quarry of which the diameters are 4 in. and 3 in., is 6 square inches; that of a similar quarry of which the diameters are 8 in. and 6¼ in., is 25 square inches, exactly half what Mr. Blomfield makes it out to be.—ED.

*See p. 135, *ante*.

diately combines with atmospheric oxygen to reform nitrogen trioxide

$$2NO + O = N_2O_3.$$

The nitrogen trioxide is then ready to convert a fresh quantity of SO_2 and water into sulphuric acid, as shown in the first equation. The nitric acid therefore merely acts as a carrier of oxygen to the sulphur dioxide.

There is some difference of opinion as to whether it is really trioxide of nitrogen or another oxide called peroxide of nitrogen (NO_2) which acts as the oxygen carrier. It is, however, quite immaterial, as in either case the reaction is much the same. The reactions given above are those accepted by Sir Henry Roscoe.

The nitric oxide is obtained from the nitric acid vapour through the decomposition of the SO_2 and steam, thus—

$$3SO_2 + 2HNO_3 + 2H_2O = 3H_2SO_4 + 2NO.$$

The four substances, SO_2, HNO_3 vapour, steam, and air are brought together in large sheet lead vessels, and when the manufacture is progressing satisfactorily, dilute sulphuric acid is being continually drawn from the chambers, while nothing escapes at their outlets but nitrogen, with a little oxygen and nitrogen trioxide. These residual gases are passed over strong sulphuric acid, which absorbs the nitrogen trioxide; when this acid is diluted, the trioxide is evolved and is used for the conversion of a fresh quantity of suphurous acid into sulphuric acid. The nitrogen and trace of oxygen are not absorbed by the sulphuric acid, and are allowed to escape into the atmosphere.

The dilute acid drawn from the lead chambers is called "chamber acid," and has a specific gravity of 1·6, and contains about 65 per cent. H_2SO_4. This acid is then concentrated by being heated in leaden pans until it attains a specific gravity of 1·7, and contains about 78 per cent. H_2SO_4, when it constitutes the B.O.V., or *brown* oil of vitriol, of commerce, the brown colour being due to the presence of traces of organic matter. All further concentration has to be effected in platinum or glass vessels, because the acid rapidly attacks the lead if stronger than B.O.V. By concentration in this way an acid of specific gravity 1·84, containing about 94 per cent. H_2SO_4 is finally obtained, and constitutes the ordinary "oil of vitriol" of commerce.

It always contains lead, from the lead vessels, as an impurity, and usually contains arsenic, from the iron pyrites (FeS_2) employed for manufacturing the SO_2.

Pure sulphuric acid is a colourless, odourless, oily liquid, having a specific gravity of 1·84. It rapidly absorbs water from the air, and is much used in laboratories for desiccating purposes. When sulphuric acid is added to water great heat is evolved; if strong acid is poured upon sugar, wood, or similar organic substances, they become charred through the rapid absorption of the water in the organic substances by the sulphuric acid.

Nordhausen Sulphuric Acid.

Fuming or Nordhausen sulphuric acid is prepared in Saxony and Bohemia, for special purposes, by distilling anhydrous sulphate of iron in stoneware retorts. It is a brown, fuming liquid, and has the formula $H_2S_2O_7$. It is used for preparing artificial alizarin and for dissolving indigo.

Sulphuretted Hydrogen, H_2S.

Sulphuretted hydrogen, or hydrogen sulphide, is a colourless gas having a disagreeable odour, which somewhat resembles that of rotten eggs. When inhaled in considerable quantities it acts as a poison; but in very small quantities it is not injurious to the health. It is inflammable, and burns with a bluish flame, forming sulphur dioxide and water.

$$2H_2S + 3O_2 = 2SO_2 + 2H_2O.$$

At the ordinary temperature, water will dissolve about three times its own volume of sulphuretted hydrogen.

The gas is most conveniently obtained by the action of dilute sulphuric or hydrochloric acid upon ferrous sulphide.

(1) $FeS + H_2SO_4 = H_2S + FeSO_4$.
(2) $FeS + 2HCl = H_2S + FeCl_2$.

Sulphuretted hydrogen will precipitate many of the metals as sulphides from their solutions, some only being precipitated from their acid solution, and others only when their solutions are neutral or alkaline. Thus bismuth, tin, arsenic, antimony, mercury, silver, lead and copper are precipitated from their acid solutions by H_2S, while iron, nickel, manganese, and zinc are only precipitated from their alkaline or neutral solutions. To render a solution acid, hydrochloric acid is the best reagent to use, while to render it alkaline, ammonia solution is usually employed.

Ordinary white paint, which contains lead carbonate, is blackened by sulphuretted hydrogen, through the formation of black lead sulphide.

$$PbCO_3 + H_2S = PbS + H_2CO_3.$$

Experiments. Group 8.

1. Prepare some sulphur dioxide.

In a flask, as shown in fig. 11, place some copper turnings, and just cover them with strong sulphuric acid, heat gently and collect the gas as shown.

(*a*) Pass some of the gas into water and note its great solubility. By means of test-paper, observe that the solution is acid.

(*b*) Bleach violets, roses, coloured wool or silk, by suspension in a jar of the gas, and note that in some cases the colour may be restored by dipping in a weak solution of sulphuric or hydrochloric acid.

2. Prepare sulphuretted hydrogen.

Place a few pieces of ferrous sulphide in a flask fitted as shown in fig. 11, and down the funnel tube pour enough water to just cover them; then add strong HCl. Note the odour and inflammability of the gas evolved, and pass some of the gas into (1) a beaker containing lead carbonate dissolved in HCl and diluted with water; (2) a beaker containing copper oxide similarly treated; and (3), a beaker containing metallic zinc dissolved in HCl, and diluted, but finally made alkaline with ammonia. In the first two cases a *black* sulphide will be produced; but in the last case a *white* sulphide.

OBITUARY.

MR. ALFRED POPE STRONG, F.R.I.B.A.—We regret to learn, from the *R.I.B.A. Journal*, of the death of Mr. Alfred Strong, of John-street, Adelphi. He was the son of the Bavarian Consul to the Greek Court, and was born on September 20, 1834. Educated at Cheltenham College, he was articled to Mr. Marchand, of Hamburg (pupil of Chateauneuf and Hittorf). In 1859 he entered the office of the late Mr. T. H. Wyatt as improver, where he remained to the end of 1861, and then commenced to practise on his own account. He was elected an Associate of the Institute in 1861 and a Fellow in 1869. He competed for several important buildings, and assisted Mr. Garling in his design for the Law Courts. He joined Mr. Samuel Parr in 1867, with whom he remained in partnership for twenty-one years. During that period his chief works were: Additions to Somerset County Lunatic Asylum; St. Paul's Rectory, Chippenham; Luddenden Foot Church and Schools; additions to Vicarage, New Parsonage, National Schools, Gravelly Schools, New Mill Schools at Tring; All Soul's Church, Vicarage, and Schools, Eastbourne; Buenos Ayres Grand Southern Railway Terminus. For years he was a contributor to our columns, principally upon foreign subjects. His death happened rather suddenly on the 5th inst., through an internal ulcer, from which he had suffered several years.

MR. THOMAS LOVICK, C.E.—We regret to hear of the death at his residence, Haverstock-hill, on the 12th inst., of Mr. Thomas Lovick, who was for many years Assistant Engineer to the late Metropolitan Board of Works, and for a while also to the London County Council. He had desired to retire from office a year or so after the advent of the new body, but he was requested to continue in the service of the Council for another year until the new staff had been appointed and got into working order. Mr. Lovick had only enjoyed his pension for two years. He had been intimately connected with nearly all the principal public improvements in the Metropolis, sanitary and otherwise, during the last half-century. Originally holding the post of Surveyor to the Parish of St. Andrew, Holborn, he was selected by Viscount Morpeth (Earl of Carlisle) for a surveyorship to the then new Metropolitan Commissioners of Sewers, in which office he was installed in 1847. That Commission had charge of the sewers and drains of the whole of London (without the walls), under various Acts of Parliament extending as far back as the time of Henry VIII. Mr. Lovick took a prominent part in the brick-sewer *v.* pipe-drain contest, being in advance of the views of a large number of the members of the Institution of Civil Engineers, who stoutly stood up for the maintenance of the large brick sewer, and strongly opposed the then new stoneware tubular drains. Mr. Lovick's views in favour of the pipes, as our readers know, ultimately triumphed. He was much associated with the late Sir Edwin Chadwick, Mr. John Phillips, and other well-known sanitarians, in working out sanitary problems of all kinds. On the creation of the late Metropolitan Board of Works, Mr. Lovick was in 1856 appointed Assistant Engineer to that Board, and was associated with the late Sir Joseph Bazalgette (then Mr. Bazalgette) in carrying out the metropolitan main drainage works. Mr. Lovick was resident engineer for two of the great intercepting sewers, and also for a part of the Victoria Embankment. He was a man of high character and ability, and his fidelity and integrity were never questioned. He was a teetotaler, and had resided for forty years in his house at Haverstock Hill. He died after an illness of six months' duration. He leaves two sisters,—his sole surviving relatives, we are informed.

GENERAL BUILDING NEWS.

CLERKENWELL TESTING OFFICE FOR WEIGHTS AND MEASURES.—This office, which was opened on the 11th inst. by Dr. Bott, Chairman of the Public Control Committee of the London County Council, has been built upon part of the surplus land available after the formation of the viaduct which carries the new thoroughfare from Gray's Inn-road to Islington. A portion of one of the arches under the viaduct has been added to the premises. Upon the basement level, entered from Warner-street, a store has been provided for the vehicles used by the inspectors; and stabling for six horses, with harness-room, &c., has been added at the rear. There is here a weigh-bridge capable of taking weights up to 7 tons, a platform for receiving large packages and receiving and testing heavy weights. From this platform there is a lift to the upper floors, and near it is a provision for testing the largest scales. There is also a heating apparatus with coal stores. A sma' room has been provided in the mezzanine for the use of workmen at meal-times. On the ground floor, entered from Rosebery-avenue, is a waiting lobby for the public, a large testing-room for the testing and stamping of measures, scales, weights, &c., and an office for one of the inspectors. Upon the first floor is a room for testing and marking glass measures, with offices for two inspectors. Upon the second floor is a room for testing the finest work, such as the weights and measures used for bullion and by apothecaries; there is here also a sitting-room, kitchen, and scullery for the caretaker. Upon the third floor are three bedrooms, and a drying-room has been formed in the roof. The building is faced with red Suffolk bricks and red Corsehill stone, the style being an adaptation of the French Renaissance. The design is by Mr. Blashill, the Architect to the London County Council, and the cost of the building has been about 6,800*l.*, the contractors being the Co-operative Builders, Limited, of Burton-road, Brixton.

VOLUNTEER HALL, JOHNSTONE, RENFREWSHIRE.—A new Volunteer Hall has just been erected at Johnstone. The building, which is of red stone, is of the Scotch Baronial style. The ground floor of the front part of the building is occupied with officers' room, members' room, sergeants' room, armoury, and all other modern adjuncts are provided. The drill-hall, is 70ft. long by 45 ft. wide. This hall is also to be used as a gymnasium. The second story of the front building is set apart for the drill instructor's dwelling-house. The architect is Mr. Peter Kerr, of Johnstone; and the contractors were:—Mason work, Messrs. David Jaffrey & Son; joiner work, Mr. Morison; slater and plaster work, Mr. George Thomson; plumber, Mr. Charles Murdoch; painter, Mr. Boyd.

WESLEYAN SUNDAY SCHOOLS, NEWCASTLE.—The memorial stones of the new Wesleyan Sunday Schools at New Benwell, Newcastle, were laid on the 1st inst. The school building will be about 90 ft. long by about 35 ft. wide, and will consist of a large hall, infants' school, and two class-rooms on the ground floor, with caretaker's house on the first floor, and heating chamber, &c., in the basement. The building is to be of stone, relieved with red-stone. The interior of the hall will be relieved by arched recesses and ornamental plaster and wood-work. Messrs. Thompson & Selby, of Newcastle, are the architects, and the general contractors are Messrs. Thirlwell & Son, of Benwell, the masonry work being executed by Messrs. N. & R. Reid, Newcastle.

PROPOSED ADDITIONAL BARRACK ACCOMMODATION IN PLYMOUTH GARRISON.—During the coming year, says the *Western Morning News*, important building operations are to be carried out to provide improved accommodation for the troops quartered within the fortress of Plymouth. There is no present intention to increase the number of troops stationed in the Western District, but rather to improve their quarters. Barracks are to be built at Crownhill, and Plymouth Citadel will be reconstructed, and appropriated as the headquarters of the Royal Artillery in the Western District. Under existing arrangements, the Artillery are quartered in various parts of Plymouth fortress, but by the new scheme, all these scattered detachments will be concentrated during the winter months at Plymouth Citadel. The building of the new barracks at Crownhill will be commenced during the coming year.

RENOVATION OF ST. MARY'S CHURCH, GREASBOROUGH, YORKSHIRE.—On the 10th inst. the re-opening took place of St. Mary's Church, Greasborough, near Rotherham. The foundation stone of the church was, says the *Sheffield Telegraph*, laid on September 29, 1826, and the consecration took place on October 17, 1828. The plan of the church is a simple rectangle, 75 ft. by 45 ft., and without any structural chancel. The pews, now removed, were narrow, and to some extent awkward. Owing to the abrupt fall of the ground, the renovation committee were unwilling to incur the expense of building a chancel. A quasi-chancel has therefore been formed by low traceried Wentworth oak screens on a base of Roche Abbey stone. On the left a vestry, and on the right an organ-chamber

has been formed by oak screens 12 ft. high. The nave has been furnished with open seats in pitch-pine. The choir stalls, reading desks, and lectern are of oak. A new communion table has also been provided. The walls are painted in oil-colours of a light terra-cotta tint, with dark red dado, and ornamented with bands of passion flowers and lilies, the wall of what would ordinarily be the east end being more elaborately adorned. The windows have been filled with pale cathedral glass. The church is now heated with hot water, and lighted with Cowan's patent lights. The total expenditure is about 1,000*l.* The contractors were:—Joiners' work, J. Wortley, Rotherham; decorator, George Woollen & Son, Rotherham; hot-water apparatus, Blakeborough & Rhodes, Stockton-on-Tees. The whole has been done under the superintendence of the architect, Mr. E. Isle Hubbard, of Rotherham.

ST. JOHN'S CHURCH, APPERLEY BRIDGE, YORKSHIRE.—A new church has been built at Greengates, Apperley Bridge, near Leeds, and on the 8th inst. it was consecrated by the Bishop of Ripon. The church, which was built from designs prepared by Messrs. Kendall & Bakes, architects, Leeds and Idle, is in the Early English style, and will accommodate 300 persons. It consists of nave and chancel, with an organ chamber on the north side and a clergy vestry on the west. The main entrance is in front, facing the road, and over it rises the tower and steeple to a height of 80 ft. It is intended to place a peal of six bells in the tower. The pews, choir stalls, the vestry screen, inner doors, and inside roof timbers are of pitch-pine. The outer doors are of oak. The windows are leaded, and filled with cathedral glass. The church and churchyard cover 2,000 square yards. The cost of the church has been 3,000*l.*

NEW CO-OPERATIVE BUILDINGS, GREENOCK.—The memorial-stone of the Greenock Central Co-operative Society's new buildings, at the corner of Roxburgh and Mearns streets, was laid on the 11th inst. In this contract the Society is building three tenements and a bakery, at a cost of between 10,000*l.* and 11,000*l.* The first and second tenements have each a frontage to Roxburgh-street of 41 ft., and the third has a frontage of 39 ft. to Roxburgh-street, and 64 ft. to Mearns-street. Large shops are being provided for the various departments of the Society. The first floors of the first and second tenements are being reserved as show-rooms and work shops for the dressmaking and millinery departments. Altogether, the shops contain 4,000 superficial feet of floorage, while the show and workrooms contain about 2,000 superficial feet, and cellarage to the extent of over 1,600 superficial feet will be provided under grocer and butcher shops. The upper floors of the three tenements are divided into houses of two and three apartments. The architect is Mr. W. Burns Stewart, Glasgow, and the following are the contractors:—Masons, Messrs. J. & R. Kirk; joiner, Mr. Gavin Paterson; plumbers, Messrs. Crawford & Kerr; slaters, Messrs. Main, Boag & Black; plasterer, Mr. James M'Creadie; gas fittings, Mr. Dugald M'Ewing; glazier, Mr. Matthew Tytler—all of Greenock; iron, Messrs. Bladen & Co.; tiles, Messrs. Galbraith & Winton; and asphalt, Val-de-Travers Company—all of Glasgow. Messrs. Wm. Morrison & Sons, Leith, are the engineers, and Messrs. Duff & Henderson, Glasgow, are the measurers.

FOREIGN AND COLONIAL.

FRANCE.—Seventy-five artists have taken part in the competition for the decoration of the Salle des Banquets at the Paris Hôtel de Ville. The designs are exhibited in the Palais des Arts Libéreaux on the Champ de Mars.——The Academie des Beaux-Arts has awarded the Achille Leclère prize to M. Henri Sirot, pupil of M. Moyaux. The subject was a design for a Bourse de Commerce.——The French Society of Painter-Engravers will open their annual exhibition on April 7, in the Rue Durand-Ruel; it will remain open till April 28. The exhibition of the "Peintres Symbolistes et Impressionistes" is open in the same locality.——M. Albert Tissandier, architect, has been commissioned by the Government to make archæological explorations in Cambodia and Java.——A Fine Art exhibition is to be opened at Angoulême on May 7, to remain open till July 9.——A competition has been opened at Angers for the erection of a monument to General Cathelinan, the celebrated Vendean leader, in the church of his native town Pin-en-Mauges.——The designs sent in for the monument to be erected at St. Quentin, in memory of the Siege of 1557, are on view in the Salle Vauban at St. Quentin. The competitors are MM. Deloye, Hiolin, Puech, Doublemard, Theunissen, Croisy, Cordonnier, Suchetet, and Damé.——The death is announced of M. Ferdinand Mazzoli, a talented archæologist and designer. He was born at St. Petersburg in 1821, but had lived at Toulouse from an early age, and adopted the profession of archithct. Devoting himself mainly to the picturesque illustration of architecture, he reproduced, in a great number of compositions, the Roman monuments of the South of France. He also produced a valuable and curious set of illustrations of the ancient city of Carcassonne; and also illustrated the numerous archæological monuments at Toulouse. He was a great collector of objects of art, especially coins.——We may also notice the death of M. Henri Schlesinger, a painter of anecdotic scenes and portraits, born at Frankfort in 1814, but who at an early period took up his abode in Paris.——M. Puvis de Chavannes has been commissioned by the department of Fine Arts, to execute in the Panthéon the large mural painting formerly assigned to Meissonier. The subject is the revictualling of Paris.——The exhibition of the Spitzer collection was opened on Sunday last, at 33, Rue de Villejust.——The picturesque little town of Rueil, near Paris, is organising its own art exhibition, which will shortly be open in the rooms of the Hôtel de Ville there.——It is proposed to hand over to the authorities of Toulouse the old buildings of the tobacco manufactory, which are the property of the State, for the purpose of installing there a School of Art, of which Mr. J. P. Laurens will be the director.——The railway company "de l'Est" is about to take the enlargement of the station at Bar-le-duc, on which about six million francs are to be expended.

SCANDINAVIA.—The excavations for the new Town Hall at Copenhagen have been commenced, and the work is to be completed by May 1 next.——A new church has been completed in Copenhagen, the architect being Herr Clemmensen; and in the new Church of Jesus, built by the well-known Copenhagen brewer, Mecænas von Jacobsen, twelve Munich stained-glass windows have been inserted.——The venerable Bjernede Church, near Sorö, over 700 years old, has been successfully restored.——The work of constructing the new "free" harbour at Copenhagen is rapidly progressing.——In an article in *Ingeniören*, the leading Danish technical organ, Dr. S. Engelstad urges the reformation of the sewerage system of Copenhagen,—*i.e.*, the emptying of the sewers *outside* the harbour, and the introduction, as far as possible, of water-closets on English principles. He shows that a cholera epidemic like that of 1853 costs the Municipality far more than the carrying out of the reforms suggested.——The Norwegian Society of Engineers and Architects has appointed a committee to consider the new building law which is to be introduced in the present Storthing. It is urged that a complete revision of the projected law is necessary, and that building inspectors should be appointed.——It has been decided to build an art and industrial museum in Bergen, at a cost of 200,000 ks., the Corporation providing the site gratis.——A handsome new church has been finished in Christiania, called the Church of St. Paul. It is built of red tiles, the style being Gothic. The designer is the City Architect, Herr Henrik Bull.——The building committee of the projected new Houses of Parliament in Stockholm has decided to move the building 20 ft. further east, as otherwise the new structure would obscure the full perspective of the Royal Palace, and has to that end called upon the Academy of Fine Arts to express an opinion whether the change would affect æsthetically the beauty of the new building at the back.——The new city electrical works in Stockholm have been completed by the architect, Herr F. Boberg. The building was commenced at the end of 1890. The existing machinery only suffices to feed 5,000 lamps, but when completed 30,000 lamps may be maintained.——The entire interior of the Dramatic Theatre, Stockholm, has been coated with a fireproof substance, invented by the Swedish Colour Fire-Proof Factory, being the first theatre in Sweden thus protected.——The cement companies in the Islands of Oland, Gothland, and Scania have been amalgamated under the name of the Swedish Cement Company.

MISCELLANEOUS.

INSANITARY SCHOOLS IN LONDON.—The London School Board having submitted to Mr. E. R. Robson, Architect to the Committee of Council on Education, a copy of the report of the Board's Assistant Architect for buildings upon the condition of the Waldron-road School, Tooting, which was built while he was Architect to the Board, Mr. Robson has (according to the *Times*) replied as follows:—

"A reference to the records of the Board will show that at the time the Waldron-road school was building there was an enormous quantity of building work in hand, and plans for new schools were constantly being submitted to the Works Committee. I have not now access to those records, but I hope the Board will call for a return of the work in hand in 1884-5, when Waldron-road School was planned and erected, in order that the present members may have a better idea of the amount of work which was then being done by me as the Board's Architect. A comparison also between the cost of the Architect's department then and now will show the relative amount expended in supervision compared with the amount of work being executed. I regret as much as anyone that defects should be discovered in the schools built while I was Architect to the Board. But I am afraid that I can render no assistance to the Board in finding any further explanation of these defects than the obvious one that adequate supervision by competent officers on the buildings themselves as they are being erected is a necessary security for thorough work. Sanitary requirements as to drains are much more exacting now than they were ten years ago. A period of neglect to make due provision for schools to meet the growth of London must be followed by a period of hasty construction to overtake the results of that neglect, and such periods of excessive pressure are less favourable to good work than a steady, continuous provision of schools, especially in the suburbs, where schools should be erected a little in anticipation of the actual population, and in view of imminent building operations. I must remind the Board in conclusion that they have themselves threatened legal proceedings against me, and only been restrained by adverse legal opinions, and that, while I should be glad to confer freely with them as an old servant of theirs in the interest of the work I carried on under them, I feel a difficulty in entering into a correspondence which may possibly be sought to be wrested to my disadvantage."

THE ENGLISH IRON TRADE.—During the past week there have been indications of what is believed and hoped to be a permanent improvement in the Cleveland pig-iron market, and this has given a slight impetus to business in the crude material in several other districts. The finished-iron branch, however, remains quiet, and not much activity is witnessed either in tin-plates or in the various departments of the steel trade. Shipbuilders and engineers are dull. The coal trade shows a little more movement.—*Iron.*

ARCHÆOLOGICAL DISCOVERY IN ARGYLLSHIRE.—Some days ago, says the *Glasgow Herald*, while workmen were engaged levelling ground at Glenramsken, near Campbeltown, they made a rather interesting find. About a foot under the surface they came upon several rough blocks of red sandstone which, on being lifted, revealed what turns out to be an ancient stone cist containing a cinerary urn of baked clay. All that the urn contained was a little earth. No flints or other relics were found, notwithstanding that a very careful search was made. The cist, which was formed of slabs of red sandstone and schist, in the form of an irregular square, was 3½ ft. in length by 2 ft. 3 in. in breadth at the north-west end and 1 ft. 10 in. at the south-east end, this being the direction in which the cist lies. The depth was 2 ft. 5 in. At the bottom of the cist there was a quantity of loose earth in which the urn was partly buried. The urn, which is ornamented, will be placed in the local museum.

THE SANITARY INSTITUTE, PARKES MUSEUM, MARGARET-STREET, W.—The ordinary general meeting of the Sanitary Institute was held at the Parkes Museum on Wednesday, March 8. Sir Thomas Crawford, K.C.B., in the chair. The Council presented a lengthy report of the work of the Institute during the year 1892, which showed that the number of members and associates had increased to a total of 1,280. Thirty-nine lectures had been given in London and ninety in the provinces, and also a number of conferences and other meetings. Twelve examinations had been held, 548 candidates were examined, 335 certificates were awarded. The Duke of Westminster was elected President of the Institute for the ensuing year.

TRADE SMOKING CONCERT.—Messrs. W. Brass & Son, builders, of 47, Old-street, E.C., held their sixth annual smoking concert at the "Salutation," Newgate-street, on Saturday last, a very pleasant evening being spent by the company present, thanks to the excellent programme provided and arranged by the hon. secs., Messrs. Morrison and Barnes. Mr. R. Fraser was chairman, Mr. D. Linton vice-chairman.

A TRADE REJOICING.—About sixty members of the staff in the employ of Messrs. Wm. Cubitt & Co., Gray's Inn-road, were entertained on Thursday last (March 9), to a banquet at the Holborn Restaurant, by Mr. Benjamin Hannen, jun., in celebration of his marriage, which took place on that day. The chair was occupied by Mr. W. Cornwell, who after the usual loyal toasts had been duly honoured, proposed the toast of the evening "Health and prosperity to the bride and bridegroom," which it is unnecessary to state was received with great enthusiasm. A very good programme of music, with a few other toasts, brought the evening to a close.

CAPITAL AND LABOUR.

END OF THE STRIKE OF BUILDING-TRADE LABOURERS AT PORTSMOUTH.—The *Portsmouth Evening News* says that the final meeting of the Master Builders' Committee and the deiegates representing the Labourers' and Bricklayers' Societies took place on Monday evening last, when the new code of working rules, which had been previously adopted by mutual consent, was formally signed by all concerned in the settlement of the strike. The new rules, which now come into operation, provide for the payment of 5d. per hour to labourers and 7½d. per hour to bricklayers all the year round. The majority of the workmen resumed their duties on Tuesday morning, but the *employés* of one firm, to the number of sixty, still remain out, in consequence of certain difficulties which have arisen between them and the foreman, who will be waited upon by the trades union officials, in order that a definite understanding as to the matters in dispute may be arrived at with the least possible delay. It is stated that the Labourers' Union continues to increase rapidly in point of numbers. The committee purpose taking steps to organise the labourers of Gosport at an early date.

MEETINGS.

FRIDAY, MARCH 17.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. Arthur Newsholme on "Nature of Nuisances, including nuisances the abatement of which is difficult." 8 p.m.

Royal Institution.—Mr. W. J. Russell on "Ancient Egyptian Pigments." 9 p.m.

SATURDAY, MARCH 18.

Glasgow Architectural Association.—Visit to Gartloch Asylum.

MONDAY, MARCH 20.

Surveyors' Institution.—Resumed discussion on Mr. P. E. Pilditch's paper entitled "Dilapidation Practice, particularly as affected by some recent decisions." 8 p.m.

Society of Arts (Cantor Lectures).—Professor W. Chandler Roberts-Austen on "Alloys." III. 5 p.m.

Leeds and Yorkshire Architectural Society.—Mr. Roland W. Paul on "The Cistercian Abbey of Dore, Herefordshire." 7.30 p.m.

Liverpool Architectural Society.—Mr. R. J. Angel on "Hot Water Supply." 7.30 p.m.

TUESDAY, MARCH 21.

Institution of Civil Engineers.—Mr. Thomas Sopwith on "The Breakdown of the *Umbria*." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Bostock Hill on "Trade Nuisances." 8 p.m

WEDNESDAY, MARCH 22.

Carpenters' Hall, London Wall.—Professor T. Roger Smith on "The Later Renaissance in England, with special reference to St. Paul's Cathedral, Greenwich Hospital, Hampton Court, &c." 8 p.m. (Admission free.)

Society of Arts.—Mr. P. F. Nursey on "The Manufacture of Non-Poisonous White Lead." 8 p.m.

Liverpool Engineering Society.—Mr. M. C. Bannister on "Cold Storage Works and other Similar Installations." 8 p.m.

THURSDAY, MARCH 23.

Institution of Electrical Engineers.—(1) Sir David Salomons, Bart., M.A. on "A New Form of Portable Photometer"; (2) Mr. E. O. Walker on "Earth Currents in India"; (3) Mr. C. K. Falkenstein on "The Influence of Electricity on Tanning Operations." 8 p.m.

Society of Antiquaries.—8.30 p.m.

Dundee Institute of Architecture.—Professor J. E. A. Steggall, M.A. on "The Influence of Town Life on National Character." 8 p.m.

FRIDAY, MARCH 24.

Architectural Association. — Paper by Mr. J. A. Gotch entitled, "In Praise of a Country Practice." 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. F. G. Baily, B.A. on "The Regulation of Direct Current Motors." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Wynter Blyth on "Sanitary Law, English, Scotch and Irish; Public Health Act, 1875; Model Bye-Laws, &c." 8 p.m.

SATURDAY, MARCH 25.

Architectural Association.—Visit to the Battersea Polytechnic, Battersea Park-road, by permission of the architect, Mr. E. W. Mountford. 3 p.m.

Edinburgh Architectural Association.—Visit to (1) Glasgow Municipal Buildings; (2) Glasgow Cathedral.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

19,904.—WINDOWS: *F. R. Bodley.*—This specification relates to an improved device, by means of which the upper sash of a window may be drawn down when desired without requiring the opening of the lower sash, or any device to be fixed to the sash. It consists of a rod having a projecting arm at the top, fixed in a convenient socket, and provided with a rubber sleeve. A rubber ring is also furnished, placed around the head of the rod to protect the glass and sash. A short distance below, and at right-angles, or opposite it, is fixed a bracket having a downwardly projecting arm, also covered with an indiarubber pad. When the window is to be opened, the latter arm is caused to rest on the bottom rail of the sash, and the rod being pulled it lowers the sash as far as the bracket will allow. This allows the upper arm to be placed over the top, and the window is drawn down as far as required. The two arms are placed at an angle to one another, in order that they may not interfere with each other's action by coming against the window.

21,096.—WINDOW-SASHES: *J. C. Hope.*—This invention relates to improvements in window-sashes, and has for its object an economical method of repairing or replacing old sashes, and of excluding draughts. At present it is customary to renew the entire sash when it becomes worn, and to substitute a new one. The inventor takes out the old sash, dresses, and grooves its back surfaces, and nails on a slip of hard wood, such as teak, birch, or oak, the edges of the slip extending about 3-16th of an inch on each side of the old sash. The parting bead is of a special section, forming a groove on either side, in which the inner extensions of the hard wood slips work, the outer extensions working in rebates formed in mouldings of any suitable design. The backs of the slips may be grooved for sash-cords in the ordinary way. For any draught to pass sashes constructed as described it will have to pass round a greatly increased number of corners before it can cause any inconvenience.

3,299.—CHIMNEY COWL: *J. T. Leighton.*—This patent refers to an invention intended to secure the prevention of down draught in chimneys. The top of any ordinary chimney can has adapted to it vertically a short extension piece forming a "neck" for the reception of what is designated the "cowl proper"—which is free to rotate around the "neck." This "cowl proper" comprises a chamber of cylindrical or other suitable shape, open at both ends, and is disposed horizontally relatively to the chimney-top or can, and has below a collar fitting around the vertical extension piece above referred to. The top of the "cowl proper" is provided with a vane of any desired pattern to allow of the former turning with the wind. One end of the "cowl proper" is of funnel-mouth formation with the open apex extending inwards. The funnel-mouthed end being always turned to the wind, the latter, on entering the "cowl proper," blows across and draws the air, and with it the smoke, up the chimney-can, whence these pass outwards at the front end of the "cowl proper."

4,169.—PAINTS: *E. C. Williams and others.*—This invention has for its object an improved paint or enamel having a body of bronze powder or other powdered metal. The following is the receipt given:—Acetate of amyl (with a little amyl alcohol) about 95½ parts; gun cotton about 4½ parts. To make this mixture put the required weight of collodion gun-cotton in a vessel, and add the acetate of amyl, shaking occasionally until the gun-cotton is dissolved. A suitable quantity of bronze or other metallic powder is then added. The acetate of amyl employed may be the commercial article which always contains amyl alcohol.

4,791.—CLOSETS: *T. Bradbear.*—This invention relates to the construction of closets where the earth or pan or some similar system is employed, and is also applicable to the construction of water-flushing and other closets, its object being to prevent the escape of foul gases, and to provide means for leading away such gases on their formation and discharging them into the atmosphere. The upper cover or seat is made of wood, or other suitable material, provided with a circular or other shaped opening in the ordinary manner. Around this opening is attached an annular trough or receptacle, constructed of metal or other material, and connected therewith is a small tube, provided at its outer end with a mouth-piece, by means of which the trough can be readily filled with water. The trough is so arranged that its upper side is below the upper surface of the closet seat. Instead of, or in addition to, the ordinary hinged cover, there is arranged a sliding cover, having a projecting pin at one end, made to slide, when required, in grooves formed upon the closet seat. On one side of this sliding cover is attached an annular band of metal, suitable for entering into the trough above described. When this annular band enters into the trough filled with water, the escape of gases through the seat opening is effectually prevented. To provide for the proper escape of the gases, small openings are formed in the closet seat other than the ordinary opening previously referred to, and in connection with these supplementary openings is arranged a pipe, opening into the atmosphere at such a height that the gases may be discharged without danger.

5,291.—WALL DECORATION: *W. S. Morton.*— This specification refers to an invention for the improved preparation of decorative materials for walls and other surfaces. A web of canvas, silk velvet, or other material of suitable texture is fixed on a backing of yielding paper by means of stiff size combined with stucco whiting or ordinary paste, and such as will set quickly when subjected to pressure and heat. The face of this prepared material is passed in contact with a metal roller, having parts of its surface sunken according to a pattern, the unrecessed parts being coated by means of a feed roller with paste setting quickly with pressure and heat, coloured if desired. In passing in contact with the metal roller the fabric is pressed therein by a metal roller heated by steam or gas jets. The heated roller may have a counterpart of the design formed on it, and the pressing parts, or the entire surface of the roller, may be engraved so as by an embossing action to produce a milled or texture-like surface on the compressed parts of the fabric.

12,728.—PAINTS: *P. Lehmann.*—This patent refers to an invention for producing suitable materials as a protective coating or paint for iron and steel, consisting of tar produced by fat, gasworks, and "goudron" or sulphur in certain proportions.

14,226.—GLAZING ROOFS, &C.: *G. Martin.* — This invention refers to improvements in the mode of glazing roofs, &c., in a cheap, effective, and water-proof manner, and with means for collecting the condensed moisture. The inventor provides an iron glazing bar of anchor-shaped cross section fixed to the purlins or other supports. Along the length of this is put a zinc cap, fitting the top of the bar, and bent out to some distance down the bar at each side to form a flange upon which the glass rests, the flange being bent up to a gutter for any escaped water, and then under again in a downward direction until its edge rests against the sides of the bar in the form of a strut or support to the flange, at the same time allowing the flange to give sufficiently for any expansion or contraction that may occur. The bottom portion of the bar forms a gutter for collecting the condensed moisture which is conveyed by the strut part of the zinc. After this cap and glass is in position, an outer zinc cap, made to fit in the under one, and provided with curved flanges on each side, having their edges tightly sprung against the glass by reason of this outer cap being screwed down tightly through the under cap into the iron bar, which is provided at intervals with capped holes to receive the screws.

21,105.—PAVING: *P. J. Jackson.*—This invention relates to an improved compound paving for streets or floors, consisting in the formation and arrangement of wooden paving blocks, so as to form a series of alternating wooden block surfaces, and hollow spaces or interstices, the latter being filled with cement, grout, concrete, india-rubber, or guttapercha, so as to form a solid pavement. It is claimed that in this manner a comparatively noiseless pavement, embodying greater durability than ordinary wooden paving, may be obtained.

21,721.—SEWER PIPES: *R. F. Dampier.*—This invention relates to improvements in apparatus for trapping, ventilating, and inspecting sewer and drain pipes in houses and other private dwellings and public buildings. It consists in placing between the inlet pipe from the house or building and the outlet pipes to sewer, an apparatus having for its object to trap the sewerage in its way from the house to the main sewer in the streets so that no foul gas can escape from the sewer into the house drains. This apparatus has the form of a man-hole and interceptor combined, access to which may be readily obtained for inspection and clearing of the drain pipes. This manhole is made of stoneware, glazed on the inside, and is formed of three detachable parts, in sections, so as to be readily put together and kept clean. The lowermost section comprises a syphon of special construction, at one side closed by a lid leading to the main sewer pipe, and at the other side a channel leading to the drain from the house water-closets or other drain inlet pipes. This syphon prevents the foul gases from returning from the main sewer.

NEW APPLICATIONS FOR LETTERS PATENT.

February 20.—3,680, J. McDonald, Domestic Fire-grates.—3,682, J. Symington, Pipe Couplings.—3,702, R. Owen, Roofing Slates.—3,726, J. Voight, Water-closet.—3,727, G. White, Windows, Sashes, and Frames.—3,730, J. Smith, Dovetailing Chisel for Mortising Machines.

February 21.—3,770, J. Williams, Cavity Building Bricks.—3,805, H. Smith, Pedestal Wash-Down Water-closet.—3,852, W. Forgie, Construction of Tanks.—3,860, A. Boult, Closets.

February 22.—3,886, W. Walters, Composition for Use as Glue, Putty, and Cement.—3,895, F. Rennoldson, Ventilating Buildings.—3,914, J. Allan, Plumb-levels, &c.—3,927, A. Dransfield, Gas and Water-pipe Hooks.—3,938, F. Vorgtley, Fire-grates.

February 23.—3,992, G. Bray, Ventilation.—3,997, C. Cox, Hinge for Swinging Looking-glasses.—4,013, S. and J. Chandler, Chimney-cap or Cowl.—4,045, R. Robinson, Presses for Bricks, Tiles, &c.

February 24.—4,058, F. Bond, Building Construction.—4,092, A. Wood, Cowls or Ventilators.—4,116, M. Jaeger, Casement-fastening or Stay.—4,121, W. Blenkinsop, Mosaic and other Tiles or Tessarac. — 4,129, W. Bostwick, Machinery for the Manufacture of Metal Lathing.

February 25.—4,155, J. Gibson and S. Russell, Fireproof Floors and Ceilings.—4,158, J. Jameson, Locks or Door-fastenings.—4,166, J. Hall, Power-feed Band Sewing-machines.—4,178, R. Taylor, Clay Dryer.—4,185, T. Anderson, Fire-grates.—4,201, J. Back, Hot-water Supply Apparatus.—4,203, C. Hill, Screw-drivers.

February 27.—4,250, C. Adams-Randall, Bolts or Fastenings for Doors.—4,259, T. Potter, Construction of Fire-resisting Floors.—4,269, W. Thompson, Preservation and Fixing of Galvanized Corrugated Roofing or Sheeting.—4,300, W. Bennett, Preventing Smoky Chimneys.—4,301, W. Bennett, Smoky Chimneys.

February 28.—4,341, W. Taylor, Wood Screw.—4,355, A. Boult, Process for the Production of Ornaments or Figures imitating Mediæval Wood-carving, such as "Tarsia" work or the like.—4,361, A. Boult, Roofing Tiles.—4,401, F. Persse, Draught Preventer for Doors and Windows.—4,403, M. Ozburn and R. Reason's Improved Gate.—4,404, G. Downing and T. Ryan, Fire-grate.—4,413, J. Davis and R. Kinkead, Draught Excluders.

March 1.—4,440, E. Drew, Windows, Fanlights, and Ventilators for Opening, Closing, Adjusting, and Fastening the same.—4,454, C. Kite and W. Barns, Bolts.—4,456, H. Coulthurst and others, Sanitary Pipes.—4,470, W. Chapman, Smoke-consuming Stove.—4,473, G. Nash, Blocked Fittings for Corners of Rooms, Staircases, &c.—4,492, J. Adams, Sash and Casement Fasteners.—4,497, M. Kellow, Slate or Tile Roof-ridging.—4,500, A. & S. Franklyn, T and Set-squares.

March 2.—4,537, C. Hernsheim, Door Springs and Buffers.—4,538, J. Neil, Fire-grates.—4,545, T. Falconer, Window-sash or Fanlight Openers.—4,560, G. Chapman, Ventilator.—4,584, J. Howe, Window-sash Fastener.—4,587, W. Eaves, Kilns for Burning Bricks, Tiles, &c.—4,610, P. Jensen, Ornamental and other Bricks and Tiles.

March 3.—4,625, E. Nayler, Ventilating Arm or Pipe for Water-closet Traps.—4,635, J. Blakey, Columns or Pillars.—4,638, R. Newbury, Lead Lights and other Lead Glazing Work.—4,643.—W. Wade producing Dovetailed or Undercut Surfaces on Tile Backs.—4,653, J. Matthews, Portable Circular Saw Mill.—4,681, H. Berney, Planning and Arrangement of Dwellings of the Cottage class.

March 4.—4,707, H. Houghton, Attaching Bib Screw-down Watercocks to Lead Pipes.—4,735, G. Jukes, Opening and Closing Doors.—4,737, L. Nathan, Artificial Marble.—4,739, F. Cole & J. Rosa, Combined Burglar Alarm and Door Fastener.

PROVISIONAL SPECIFICATIONS ACCEPTED.

542, T. Fagg, Window Holders, &c.—1,154, C. Zimmermann, Cutter for Woodwork.—1,207, T. Ryland, Hinges—1,295, C. Howatson, Door Handles.—1,446, G. Colwell, Window-fastening.—1,603, E. Rathbun, Chimneys.—1,677, W. Webster, Cement.—1,682, J. Muller, Water-closets.—1,746, C. Showell, Hinges.—1,794, T. Full, Fastenings suitable for Doors and Windows.—1,923, R. Harrison, Opening, Closing, and Adjusting Fanlights, Sashes, and Ventilators.—1,985, J. Sumner, Attaching Door-knobs to Doors, &c.—2,043, S. Johnson, Disinfecting and Ventilating Houses, &c.—2,056, H. Saqui and others, Bolts or Fasteners for Doors, &c.—2,440, J. Allen, Number and Letter Plates and other Attachments for Doors and Door Frames.—2,880, C. Thomerson, Sheet Metal Roofing.—2,941, H. Thomas, Painters' Brushes.—2,956, J. Dick, Metallic Roofing.—3,006, H. Mason, Alarm for Doors, Windows, and other Buildings.—860, J. Holt, Pumps for Actuating the Siphons of Flushing Cisterns for Water-closets, &c.—1,266, P. Allday & Co., Door Chains.—1,828, W. Butterfield, Paint Cans, &c.—2,165, J. Barton, Preventing Chimneys Smoking.—2,326, W. Swain, Sash-fastener.—2,438, J. Jemson, Stoves and Fire-places.—2,533, A. Fowler, Water-closets.—2,534, T. Kemp, Plug-stopper, with Purchase Handle for Testing Pipe Drains with Water.—2,764, P. Robinson, Girders and other like metal sections, and in appliances to be used therewith.—2,784, J. Turner, Screw-driver.—3,034, A. Dumoulin, Varnishes.—3,161, S. Marsden, Window-fastener. — 3,258, J. & B. Emmott, Chimney-pots.—3,322, H. Seddon, Facing-plates, Tiles, &c.—3,427, A. Barr, Step-ladders.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

4,062, C. & C. Kite, Ventilators.—6,638, W. Ward & Sons and W. Ward, Brick-making Machinery.—1893: 1,381, G. Josepby, Air Moistening and Ventilating Apparatus.—1,404, J. Merrill, Automatic Flushing Siphons. 4,131, J. Knowles, Treatment of Raw Materials to be used in the production of Portland Cement.—7,827, T. Halbourne, Bakers' Ovens. — 11,480, W. Williams and W. Lewis, Suspender for Paint-pots, &c.—11,821, O. and H. Smith, Hinge.—249, M. Fawcett and others, Fireproof Floors.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

MARCH 6.—By *Holcombe & Betts:* 4, Berner's-st., Oxford-st., and 10, Newman Mews, u.t. 21 yrs., g.r. 200*l.*, 1,100*l.*; 6, New Cavendish-st., u.t. 14 yrs., g.r. 55*l.*, 920*l.*—By *Higgins & Son:* No. 60, Regent's-pk.-rd., u.t. 47 yrs., g.r. 16*l.*, 806*l.*—By *J. Hibbard & Sons:* The residence called "Bavaria," Elm-pk., Pinner, u.t. 95 yrs., g.r. 8*l.* 8s., r. 70*l.*, 710*l.*; 4, Park-lane, Stoke Newington, u.t. 73 yrs., g.r. 3*l.* 10s., r. 36*l.*, 395*l.*

MARCH 7.—By *Oakley, Fisher & Co.:* 8 & 9, Gloucester-rd., Lambeth, u.t. 62 yrs., g.r. 6*l.*, r. 67*l.* 12s., 585*l.*; 16, Wyvill-rd., u.t. 53 yrs., g.r. 4*l.* 17s. 6d., r. 35*l.* 2s., 300*l.*; 87, Hartington-rd., u.t. 66 yrs., g.r. 5*l.*, 270*l.*—By *Sudlow Herrick & Sons:* 98 & 100, Falcon-rd., Battersea, u.t. 35 yrs., g.r. 9*l.*, r. 55*l.*, 520*l.*; 102 & 104, Falcon-rd., u.t. 35 yrs., g.r. 10*l.*, r. 28*l.*; and a l.g.r. of 6*l.*, 260*l.*; 108, Falcon-rd., u.t. 21 yrs., g.r. 5*l.*, r. 22*l.*, 155*l.*; 9, Wurtemberg-st., Clapham, u.t. 35 yrs., g.r. 4*l.* 10s., r. 24*l.*, 215*l.*; 22, Tor-

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
Eight Cottages and Alterations to Municipal Buildings	Cashel Town Com. ..	.....	Mar. 27
Pair of Semi-detached Cottages	Maidenhead Artisans' Dwellings Co.	7 Guineas	do.
Scouring and Cleansing River, &c.	Somerset Drainage Commissioners	25*l.*	April 5

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Show-rooms, Offices, &c. Moorhead, Sheffield	Newton, Chambers & Co	Flockton & Gibbs	Mar. 21
Supply and Erection of Heating and Cooking Apparatus	Tredegar Union	W. L. Griffiths	do.
Soldiers' Institute, Woolwich	.....	Newman & Newman	do.
Pipe Sewer (12 in.), Dunscar Brow	Astley Bridge Loc. Bd.	W. J. Lomax	do.
Portland Cement, &c.	Aberdeen Twn Coun.	A. Smith	do.
Business Premises, Chapeltown, Sheffield	Barnsley British Co-op. Society, Lim.	Wade & Turner	do.
Retorts, Fire Bricks, &c.	Glasgow Town Coun.	*Official*	do.
Road Metal, &c. Wellingborough	Irthlingborough H. B.	do.	do.
Road Metal, &c. (4,800 tons), Oakham	Rutland C. C.	do.	do.
Gas and Water Pipes, &c.	Manchester, Sheffield, & Lincs. Ry. Co. ..	do.	do.
Construction of Swing Bridge (Hydraulic) Schelswe	Rotterdam Communal Administration	do.	do.
*Sewers, &c.	Lewisham Bd. of Wks	do.	do.
Extension of Brick Bridge, Torquay	G. W. R. Co.	do.	Mar. 22
Goods Shed, &c. Torre	do.	do.	do.
Wrought-iron Girders (187 tons), London	do.	do.	do.
Erection of Two Purifiers, and Removal and Re-erection of Two others	Workington Twn C...	do.	do.
Purifier House, &c.	Workington Corp.	do.	do.
Additions, &c. to Church, Halton Holegate	.....	C. Hodgson Fowler ..	do.
Additions, &c. to Dwelling-house, Kidderminster	.....	J. M. Gething	do.
*Alterations, &c. to Small Pox Hospital	West Ham Union	F. J. Sturdy	do.
Additions, &c. to Workhouse	Huddersfield Union ..	J. Barraclough	do.
Road Metal, &c.	Havant R.S.A.	H. R. Trigg	do.
*Fire Escape Bridges at Infirmary	Holborn Union	H. Saxon Snell	do.
Four Double Houses, Batley	.....	H. B. Buckley	Mar. 23
Enlargement of Business Premises	Bradford Provident Industrial Society ..	Rycroft & Firth	do.
Flagging, Channelling, Road Metal, &c.	Clayton-le-Moors L. B.	A. Foster	do.
Additions, &c. to Public Baths	Rotherham Twn Coun.	C. B. Newton	do.
Fifteen Cottages, Rogerstone, Mon.	House Property and Investment Co.	T. Rees	do.
School Buildings	South Shields Sch. Bd.	H. Grieves	do.
Hospital	Skipton Local Board	Mr. North	do.
Gasholder Tank, &c.	Oundle (Yorks.) Gas Co.	J. Eunson	do.
Road Metal, &c. Boston	Holland Fen Highway Board	J. Eastgate	do.
*Sanitary Works, Newington Workhouse	St. Saviour's Union ..	Jarvis & Son	do.
Chapel, Pontardulais	Calvinistic Methodist Committee	J. E. Davies	do.
Granite Spalls (1,000 tons)	Kensington Union	*Official*	do.
Forming, Kerbing, Channelling, &c. (two streets)	Cardiff Corporation ..	do.	do.
Goods Shed, &c. Wigan	Wigan Junction Railway Co.	do.	do.
Erection and Supply of Three Steel Receivers	Corp. of Trinity House	do.	do.
Whinstone, &c. York	Bulmer East Highway Board	do.	do.
Paving Materials, Road Metal, &c.	Clerkenwell Vestry ..	do.	do.
Store House, &c. Kingstown	Com. of Irish Lights..	do.	Mar. 24
Main Sewer and other Works	Luton Town Council	do.	do.
Levelling, Metalling, Kerbing, &c.	Rugby Local Board ..	J. H. Brierley	do.
Sewering, Paving, Flagging, &c. (two streets)	Nelson Corporation ..	J. W. Bradley	do.
School Buildings, Llandaff	Managers of National Schools	Halliday & Anderson	do.
Drainage Works	Whitby Union	R. Lennard	do.
Stone Bridge, North Shields	Tynemouth U.R.S.A.	A. S. Dinning	do.
*Works and Materials	Walthamstow L. B. ..	G. W. Holmes	do.
*Sewer Works	do.	do.	do.
Business Premises, Six Houses, &c.	Dewsbury Pioneers Industrial Society ..	Holtom & Fox	do.
School Buildings, Dover	Managers of Christ Church District	E. W. Fry	Mar. 25
Sewerage and Sewage Disposal Works, Marchay	Belper R.S.A.	R. Argile	do.
School Buildings and other Works, Cardiff	Rev. Canon Thompson	E. M. Bruce-Vaughan	do.
Church Building, Kingsley Moor, Stoke-upon-Trent	.....	Mr. Whitehouse	do.
School-room and Master's House, Caerphilly	Eglwysilan Sch. Bd.	T. Rowland	do.
Dwelling-house, &c. Weston-super-Mare	.....	J. S. Wilde	do.
Whinstone (6,000 tons), Beverley	East Riding C. C.	A. Beaumont	do.
School Buildings, New Pallas, Ireland	Rev. J. Sullivan	.....	do.
*Road Works	Middlesex C. C.	*Official*	do.
Reconstruction, &c. of Sluice Gates	Charente Prefecture.	do.	do.
Road Metal, Cement, &c.	Finchley Local Board	do.	Mar. 27
Twenty Semi-detached Villas, Aberamon	.....	G. A. Trehearne	do.
Forming, Metalling, Sewering, &c. Poole	Heckford Park Estate	H. F. J. Barnes	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Paving Works (8,400 sq. yds.)	Dukinfield Local Bd.	H. Veevers	Mar. 27
*New Main Sewers, &c.	Bournemouth T. C. ..	F. W. Lacey	do.
*Aberdeen Granite Kerb	Kingston-on-Thames Corp.	*Official*	do.
Stoneware Pipes, Bricks, Lime, &c.	Swindon New Town Local Board	H. J. Harrap	do.
Alterations to Caledonian Hotel, Carlisle	.....	J. Armstrong	do.
Business Premises, Leeds	.....	T. Winn	do.
Two Semi-detached Villas, Thorpe, Yorks	Capt. J. Hunter	R. Lennard	do.
*Technical Schools and Free Library	Widnes Corporation..	Woodhouse & Willoughby	Mar. 31
Hotel and Boarding-house, Redruth	.....	A. H. Jenkin	do.
Supply of Turned and Bored Pipes	Ulverston Local Bd.	J. S. Swan	do.
Flint and Granite Road Metal, &c.	Malling U.R.S.A.	J. Ennals	do.
School Buildings, Waterfoot	Rawtenstall Sch. Bd.	T. Bell	do.
*Wood Paving Works	Hackney Bd. of Wks.	J. Lovegrove	do.
Hospital, Bangor, Wales	The Committee	J. Gill	do.
Re-paving of Market	Burslem Corporation..	F. Bettany	do.
Levelling, Paving, Metalling, &c.	Eastbourne Twn Coun.	C. Tomes	do.
School Buildings	Briton Ferry Sch. Bd.	H. F. Clarke	do.
Extension and Alteration of Markets	Manchester Corp.	J. Allison	Mar. 31
Cold Storage Rooms, &c.	do.	M. C. Bannister	do.
*Three Water Carts, One Water Van, and Three Flushing Vans	Islington Vestry	J. Patten Barber	do.
*Making-up and Tar-paving Road	Fulham Vestry	W. Sykes	do.
*Re-roofing St. David's Church, Neath	The Churchwardens..	*Official*	do.
Reservoir, Tanks, &c.	Church Stretton Water Co.	do.	do.
Assembly Hall, &c. Stornoway	Free Church Com.	J. Robertson	Mar. 31
Additions to Business Premises, Cork	T. J. Lipton	R. Walker	do.
*Twenty-three Houses, Catford, S.E.	.....	F. & W. Stocker	do.
*Urinal, Old Gravel-lane	St. George-in-the-East Vestry	*Official*	do.
*Roadmaking, &c. Works	Tonbridge U.R.S.A.	W. Oakley	do.
*Erection of Four Small Houses, Barnet	.....	.....	Mar. 31
Air Vessel and other Works at Waterworks	Braintree Local Board	J. H. Jehons	do.
Granite Road Metal, Kerbs, Setts, &c.	King's Lynn Corp.	E. J. Silcock	do.
Hotel Premises, Llanbradach	Taff Vale Brewery	J. Williams	do.
Additions to Corn Exchange, Peterborough	.....	H. M. Townsend	do.
Cottage at Waterworks	Braintree Local Board	J. H. Jehons	do.
Flagging, Kerbing, &c.	Burnley Town Council	F. S. Button	April 1
Decoration of Town Hall	Paisley Town Council	.....	April 3
Dwelling House, Greystones, Ireland	Rev. Father Lieby	P. F. Coniber	do.
School Building	Tavistock Grammar School Committee ..	.....	April 4
Flint, Road Metal, &c.	East Grinstead L.B. ..	*Official*	do.
Laying and Supply of Water Main	Queenborough T.C. ..	do.	April 5
Show Yard Building, Belfast	North East Ireland Agricultural Assoc...	J. Boyd	April 6
Recreation Room, &c. Fishponds, Bristol.	Diocesan Training College	W. L. Bernard	April 7
Gasholder Tank	Manchester Corp.	*Official*	do.
Road Metal, &c.	Wanstead Local Board	do.	do.
*Drainage and other Works, Seaford	.....	G. A. Wallis	April 8
*Sewerage Works, Weybridge and Oatland	Chertsey R.S.A.	W. H. Radford	April 11
C.I. Sewerage Pipes, 18-in. &c. (7 miles)	do.	do.	do.
Construction of Bridge, Santander	Spanish Ministry of Public Works	*Official*	April 13
*New Council Buildings	Staffordshire C.C.	H. J. Hare	do.
School Buildings, Mansfield	Brunts' Technical Sch. Committee	Evans & Jolly	No Date
Excavating Work, Bradford	.....	J. H. Dixon	do.
Warehouse, Cursitor-street, E.C.	.....	Satchell & Edwards	do.
*Construction of Bridge, Bardney	.....	.....	do.
Extension of School Buildings, New Mills	Hague Bar Sch. Bd.	E. Godward	do.
Laying and Supplying 4,800 sq. yds. Whinstone	Motherwell (N.B.) Police Commissioners	*Official*	do.
Grit Setts, 6-in. 1,500 tons	Manchester Highway Committee	do.	do.
*Purchase of Materials, Pulling-down, &c. Houses	Acton Local Board	do.	do.
*Windsor Chairs for Library	.....	C. J. Ferguson	do.
Seven Houses, Leeds	Mr. Pawe	.....	do.
Boathouse, York	White Rose Amateur Rowing Club	.....	do.
School Buildings Derby	Denby Colliery	.....	do.
New Street Works, Armley	J. Jackson	.....	do.
Washhouse, &c. Aspatria	J. Matthews	.....	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Surveyor and Inspector of Nuisances	Eton Union	150*l.* per annum	Mar. 21
*Surveyor's Sanitary Inspector, &c.	Dodworth Local Bd.	.....	Mar. 21
*Surveyor	Sutton (Surrey) Local Board	250*l.*	Mar. 21
*Road Foreman	Vestry of Hersell	.....	Mar. 21
*Assistant Surveyor	East Barnet Valley Local Board	125*l.* per annum	do.
*Road Surveyor	Hackney Bd. of Wks.	2*l.* 10*s.* weekly	Mar. 21
*Road Foreman	City of Birmingham ..	2*l.*	Mar. 21

Those marked with an Asterisk (*) are advertised in this number. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, pp.* xx. *and* xxi.

Piano-av., Camden-town, u.t. 51 yrs., g.r. 4*l.* 12*s.* 6*d.*, r. 42*l.*, 375*l.*—By *Fleuret, Sons & Adams:* F.g.r. of 43*l.* 10*s.*, Henslowe-rd., Dulwich, reversion in 83 yrs., 330*l.*; f.g.r. of 27*l.*, Poplar Cottages, Sutton, ditto, in 82 yrs., 455*l.*; "The Hollies" and "Lennox Villa," Southgate, u.t. 87 yrs., g.r. 14*l.* 14*s.*, r. 64*l.*, 600*l.*; 66 to 70, Warren-rd., Croydon, f., 1,300*l.*; 14A, Prince-st., Bermondsey, u.t. 3 yrs., g.r. 2*l.*, 27*l.*—By *Debenham Tewson & Co.:* Nos. 122, 124, 126, Old Kent-rd., f., r. 175*l.*, 2,770*l.*; f.g.r. of 5*l.*, Clarence-st., reversion in 5½ yrs., 500*l.*; 1 to 6, Munro-ter., Chelsea, u.t. 85 yrs., g.r. 150*l.*, r. 467*l.*, 330*l.*; f.g.r. of 28*l.* 13*s.* 6*d.*, Commercial-rd., Peckham, reversion in 26 yrs., 1,230*l.*; f.g.r. of 11*l.* 4*s.*, Camden-street, reversion in 19 yrs., 570*l.*; 24 to 36 (even), Commercial-rd., f., r. 208*l.*, 2,690*l.*; 1, 3 to 7, Camden-st., f., r. 122*l.*, 1,765*l.*; 12 and 13, Camden-st., f., r. 40*l.*, 650*l.*; 1 to 14, Camden-av., f., r. 420*l.*, 6,710*l.*—By *Worsfold & Hayward* (At Dover): 93, Maison Dieu-rd., Dover, f. 750*l.*

MARCH 8.—By *M. Hubbard:* 80 and 82, Templar-rd., Homerton, u.t. 71 yrs., g.r. 9*l.*, 360*l.*—By *A. Prevost & Son:* No. 237, Mile End-rd., f., r. 100*l.*, 2,400*l.*—By *Bisley & Sons:* 51 and 53, The Grange, Bermondsey, f., 610*l.*—By *H. Oughton & Sons:* 1 to 6, South Parade, Chelsea, and 3, York Mews, f., area 9,064 ft., 5,310*l.*; 19, Wood-st., Bishopsgate, f., r. 45*l.*, 838*l.*; 1, Bywater-st., Chelsea, u.t. 16 yrs., g.r. 5*l.* 5*s.*, r. 30*l.*, 215*l.*

MARCH 9.—By *Newbon & Co.:* 1, Pitt-st., Tottenham Ct.-rd, f., r. 57*l.*, 695*l.*; 1, 3, and 5, Bryan-st., Caledonian-rd., u.t. 59 yrs., g.r. 15*s.*, r. 125*l.*, 860*l.*; 93, Brecknock-rd., Camden-town, u.t. 47 yrs., g.r. 5*l.* 10*s.*, 420*l.*; f.g.r. of 17*l.* 17*s.*, Market-pl., Tottenham, reversion in 76 yrs., 375*l.*; 17 and 19, Somerfield-rd., Finsbury-pk., u.t. 73 yrs., g.r. 14*l.* 14*s.*, r. 80*l.*, 690*l.*; 45 and 87, Finsbury pk.-rd. u.t. 73 yrs., g.r. 18*l.* 18*s.*, r. 86*l.*, 800*l.*—By *Glover & Harrison:* 118, Drummond-st., Euston-rd., u.t. 18 yrs. g.r. 11*s.*, r. 50*l.*, 350*l.*—By *Stimson & Sons:* 49, Carter-st., Walworth, u.t. 52 yrs., g.r. 5*l.* 15*s.* 6*d.*, 300*l.*; 51, Olney-st., u.t. 22 yrs., g.r. 4*l.* 10*s.*, r. 30*l.*, 160*l.*; i.g.r. of 35*l.* 11*s.*, Gloucester Cottages, Mortlake, u.t. 57 yrs., g.r. 8*l.* 15*s.*; i.g.r. of 40*l.*, Queen's-pl., u.t. 54 yrs., g.r. 16*l.* 16*s.*, 580*l.*; i.g.r. of 47*l.*, Spa-rd., Bermondsey, u.t. 23 yrs., g.r., 23*l.* 2*s.*, 300*l.*; 137 & 139, Coburg-rd., Old Kent-rd., and 171A, 171 to 175, Neate-st., u.t. 26 yrs., g.r. 36*l.*, 600*l.*; 20, Kinglake-st., u.t. 14 yrs., g.r. 3*l.*, 65*l.*; 1 to 7 (odd), Bagshot-st., u.t. 14 yrs., g.r. 9*l.* 5*s.*, 250*l.*; 17 & 18, Cancel-st., Walworth, u.t. 12 yrs., g.r., 8*l.*, 150*l.*; 11 & 13, Briant-st., New Cross, u.t. 27 yrs, g.r. 3*l.*, 265*l.*; 18, Mostyn-rd., Brixton, u.t. 70 yrs., g.r. 5*l.* 5*s.*, 265*l.*; 22 to 28, even, Appian-rd., Old Ford-rd., u.t. 70 yrs., g.r. 14*l.*, 300*l.*; 21 & 25, Andalus-rd., Clapham, u.t. 82 yrs., g.r. 12*l.*, r. 56*l.*, 455*l.*—By *C. C. & T. Moore:* 53, Brook-st., Ratcliff, c., 150*l.*; 5, Prince's-st., St. George's-in-East, c., 200*l.*; 6, Wellclose-sq., f., r. 50*l.*, 570*l.*; 16 & 16½, Wellclose-sq., f., 415*l.*; 36A, Gower-walk, f., 300*l.*; i.g.r., of 30*l.*, Christian-st., &c., u.t. 8¾ yrs., g.r. 10*l.*, 90*l.*; i.g.r. of 21*l.* 10*s.*, New Ivy-st., Hoxton, u.t. 31 yrs., g.r. 9*l.*, 155*l.*; "Rosedale," Buckingham-rd., Woodford, f., r. 26*l.*, 340*l.*

MARCH 10.—By *Warlters & Lovejoy:* 50 to 56 even, East-rd., Plaistow, f., r. 102*l.* 14*s.*, 1,070*l.*; eight plots of land, Cambridge-pk. and Lonsdale-rd. Leytonstone, 570*l.*; 2 to 5, St. Thomas-rd., Harlesden, u.t. 95 yrs., g.r. 20*l.*, 1,010*l.*; 4, Green Lanes-ter., Highbury, u.t. 77 yrs., g.r. 7*l.* r. 36*l.*, 360*l.*; 1 to 6, Salisbury-ter., Southgate, u.t. 98 yrs., g.r. 27*l.*, 900*l.*; 4 to 7, Alfred-ter., u.t. 97 yrs., g.r. 20*l.*, 890*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	9/0/0 o/0/0
Teak, E.I.	load	9/0/0 15/0/0
Sequoia, U.S.ft.cu.		2/3 2/6
Ash, Canada load		2/10/0 4/0/0
Birch, do.		3/5/0 4/10/0
Elm, do.		3/10/0 4/10/0
Fir, Dantsic, &c.		1/10/0 3/5/0
Oak, do.		3/0/0 5/5/0
Canada		5/10/0 7/0/0
Pine, Canada red		2/10/0 3/10/0
Do. Yellow		2/10/0 4/10/0
Lath, D'ntsic, fath		5/0/0 6/0/0
St. Petersburg		5/0/0 7/0/0
Deals, Finland 2nd & 1st std	100	7/0/0 9/10/0
Do. 4th & 3rd		6/10/0 7/0/0
Do. Riga		6/10/0 8/0/0
St. Petersburg, 1st yellow		10/0/0 14/0/0
Do. 2nd yellow		8/0/0 9/0/0
Do. white		7/10/0 9/10/0
Swedish		7/0/0 15/10/0
White Sea		8/0/0 16/10/0
Canada, Pine 1st		21/0/0 27/10/0
Do. do. 2nd		15/0/0 17/0/0
Do. do. 3rd &c.		7/10/0 10/0/0
Do. Spruce, 1st		8/10/0 11/0/0
Do. do. 3rd & 2nd		6/15/0 8/0/0
New Brunswick		6/10/0 7/10/0
Battens, all kinds		3/0/0 15/0/0
Flooring boards, sq., 1 in. prep. 1st		0/8/6 0/14/6
Do. 2nd		0/7/6 0/10/6
Other qualities—		0/4/0 0/7/6
Cedar, Cuba	..ft.	/4 /4½
Honduras, &c		/3½ /4½
Mahogany, Cuba		/4½ /6½
St. Domingo, cargo av.		/4 1/6
Mexican do. do.		/3½ /4½
Tobasco do. do.		/3½ /6½
Honduras do.		/4½ /6
Box, Turkey	ton	4/0/0 13/0/0
Rose, Rio		9/0/0 20/0/0
Bahia		8/0/0 18/0/0
Satin, St. Domingo	..ft.	0/0/6 0/1/3
Porto Rico		0/0/7 0/1/6

TIMBER (*continued*).

Walnut, Italian	..	0/0/3½ 0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/0/10½ 0/0/0
Bar, Welsh, in London		5/17/6 6/0/0
Do. do. at works in Wales		5/7/6 5/10/0
Do. Staffordshire, in London		6/0/0 6/10/0
COPPER—British, cake and ingot		48/0/0 48/10/0
Best selected	..	49/10/0 50/0/0
Sheets, strong	..	57/0/0 58/0/0
Chili, bars		45/8/9 45/16/3
YELLOWMETAL	lb	0/4 11-16 /0/5½
LEAD—Pig, Spanish	ton	9/16/3 9/17/6
English com. brands		9/17/6 10/0/0
Sheet, English, 6 lbs. per sq. ft. and upwards		11/10/0 0/0/0
Pipe		12/0/0 0/0/0
ZINC—English sheet	ton	21/10/0 0/0/0
Vieille Montagne		22/0/0 0/0/0
TIN—Straits		94/10/0 95/0/0
Australian		98/0/0 95/10/0
English Ingots		98/10/0 99/0/0
Banca		94/5/0 94/10/0
Billiton		94/0/0 94/10/0

OILS.

Linseed	ton	21/10/0 21/15/0
Cocoanut, Cochin		30/10/0 0/0/c
Do. Ceylon		28/10/0 0/0/0
Palm, Lagos		33/10/0 0/0/0
Rapeseed, English pale		26/10/0 0/0/0
Do. brown		25/0/0 0/0/0
Cottonseed ref.		25/0/0 0/0/0
Oleine		23/0/0 24/0/0
Lubricating, U.S.		4/0/0 5/0/0
Do. refined		5/10/0 12/0/0
TAR—Stockholm	barrel	0/17/6 0/18/6
Archangel		0/12/6 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 12 noon on Thursdays.*]

BARMOUTH.—Accepted for drains, air inlets, and ventilators for eleven houses, Marine-terrace. Messrs. Thomas Roberts & Son, engineers, Portmadoc :—

Hugh Jones, Barmouth £175 0 0

BARNET.—For refitting shop at High-street, High Barnet. Mr. C. Shiner, architect :—

Drew & Cadman	£383	Yardley & Son	£325
W. Vanstone	334		

BARRY (Glamorganshire).—For erecting a house for Dr. Powell Barry. Messrs. James & Morgan, architects, Charles-street Chambers, Cardiff :—

D. Davies	£2,139 0	D. & J. Horner	£1,772 5
D. J. Davies	2,120 0	W. Richards	1,600 0
Stephens, Bastow, & Co., Limited	1,947 0	H. J. Money	1,580 0
Richards & Cranston	1,794 0	F. Small	1,495 0

BEVERLEY.—For the erection of a boiler-house, chimney-shaft, &c., East Riding Asylum, Beverley. Messrs. Hawe & Foley, architects, Beverley. Quantities supplied :—

Geo. Jackson & Sons	£1,620	Holden & Myles, Stalybridge (accepted)	1,427
J. R. Foley	1,510		
G. & R. Pape	1,498		

BEXHILL (Sussex).—For making-up, metalling, paving, kerbing, &c., Hamilton, Windsor, Lower Sea, and other roads for the Local Board. Mr. Sydney Smith, Surveyor, Dorset Cottage, Bexhill, Sussex :—

P. Jenkins	£6,531	G. Marchant	£5,658
J. W. Webb	6,171	H. Eldridge †	1,747
Laurence	5,910	H. Spencer ‡	1,789
S. Hudson, Streatham *	5,767		

* Accepted.

† Three roads only. ‡ Two roads only.

BISHAM.—For the erection of a house at Bisham, Berks., for Mr. Percival Harter. Messrs. Kidner & Berry, architects, 23, Old Broad-street, London, E.C. :—

Silver & Son	£7,769	W. Watson	£7,376
Lawrance & Sons	7,736	Parnell & Son	7,144
Y. J. Lovell	7,641	S. J. Scott*	7,076
Webster & Cannon	7,383		

*Accepted.

BRIDGEND (Glamorgan).—For the erection of St. Iltyd's Church, Bridgend. Mr. E. M. Bruce Vaughan, architect :—

Welcock & Co.	£2,800	Stephens, Bastow, & Co.	£2,498
Jenkins Bros.	2,530	Claridge & Bloxham	2,284
Shipton & Sons	2,508	E. Rees, Pencoed*	1,895

* Accepted.

BRISTOL.—For the erection of "The Grand Pump Room and Spa," at Clifton, Bristol, for Mr. George Newnes, M.P. Messrs. Marks, Munro, & Son, architects, Bristol and Birmingham :—

Going & Ingram	£6,885	G. Humphreys	£5,774
J. E. Davis	6,240	Cowlin & Son	5,543
Wilkins & Sons	6,189	W. Church	5,320
Eastabrook & Sons	5,998	A. J. Beaven, Bristol*	4,900
E. T. Hatherly	5,997	C. A. Hayes	4,839
F. A. Forse	5,919 15		

*Accepted.

BURNLEY.—Accepted for the erection of two shops and dwelling houses, Clitheroe-road, Brierley. Mr. Jas. T. Landless, architect, Manchester-road, Nelson, Lancs. :—

Mason.—Geo. Hunter, Brierfield £430 0 0
Joiner.—Jas Hudson " 190 0 0
Plumber.—C. Tattersall " 65 0 0
Plasterer.—John Hartley, Nelson 35 0 0
Slater.—Wm. Stamworth, Burnley 25 0 0

BUSHBY (Leicestershire).—For the erection of a conservatory for Mr. J. E. Kirby. Messrs. Miles & Beasley, architects, Leicester :—

W. J. Iliffe	£159 15	Hardy, Bruin & Co.	£100 10
Messenger & Co.	152 15	T. Sharman	94 10
Haywood & Co.	118 4	C. Wright	90 10

BURTON-ON-TRENT.—For the erection of a block of two residences, Blackpool-street, Burton, for Mr. C. O. Hall. Mr. R. E. Carpenter, architect, Burton. Quantities by the architect :—

H. Edwards	£1,100 0	Hodges	£1,000 0
Lowe & Sons	1,091 7	T. Chamberlain*	978 16 7

* Accepted.

CARDIFF.—For the construction of sewers, Tyndall and Herbert streets, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff. Quantities by the Borough Engineer :—

J. Rees	£5,709 0	J. Allan (accepted)	£3,360 3
J. Strachan	3,568 14		

CARDIFF.—For the reconstruction of brick sewers, Severn and Richmond roads, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff. Quantities by the Borough Engineer :—

Severn-road.

J. Allan	£895 0 0	Ellis & Davies	£800 9 0
F. Ashley	816 5 1	R. Smith	761 15 0
J. Rich	803 0 0	T. Rees (accepted)	759 5 0

Richmond-road.

J. Allan	£3,428 5	R. Smith (accepted)	£2,528 10
F. Ashley	3,280 0	T. Rees	2,380 5
Ellis & Davies	3,193 5		

CARDIFF.—For rebuilding No. 87, St. Mary-street, Cardiff, for Mr. James Howell. Messrs. J. P. Jones, Richards, & Budgen, architects. Quantities by the architects :—

Rees, Gibbon, & Thomas	£2,807 16 9	D. J. Davies	£2,550 0 0
Jones & Co.	2,779 0 0	C. C. Dunn	2,455 0 0
Jones Bros.	2,650 0 0	James Allan*	2,356 3 6

*Accepted.

CARNFORTH.—Accepted for the erection of extensive additions to business premises, for the Co-operative Society. Mr. Robt. Walker, architect, Windermere. Quantities by the architect :—

Masons' Work and Walling.—J. Rigg & Son, Carnforth £786 16 6
Slating.—W. Atkinson, Leeds 97 18 0
Joiners' Work.—W. Wilson, Carnforth 388 0 0
Plastering and Fireproof Floors.—W. Howarth, Berwick 118 18 6
Plumbing, Painting, and Glazing.—J. R. Turner, Kendal 136 0 0

CHELMSFORD.—Accepted for laying about 400 yards of 4-in. C.I. water-main for the Corporation. Mr. G. H. Sasse, Borough Surveyor, 14, Museum-terrace, London-road, Chelmsford :—

Jarrow, Chelmsford (at schedule of prices).

CHEPSTOW.—For the erection of a cattle market near the railway-station, for the Local Board. Mr. J. H. Atkins, Surveyor :—

H. Welsh	£5,500 0	Edwd. Finch & Co., Limited	£3,149 0
Alfred King & Sons	3,437 0	Cuthbert William Whalley	2,808 5
John Linton	3,250 0		

DORKING.—For the construction of additional sludge-pit, filter-beds, &c. (contract No. 6), for the District Local Board. Mr. James Lemon, M.Inst.C.E., 9, Victoria-street, Westminster, S.W. :—

Facey	£7,000	J. Butt	£5,696
J. Jackson	5,900	B. Cooke & Co.	5,374
Hall	5,700	Peters	5,087

Contract No. 7.

Bowes, Scott, & Co. £215

Contract No. 8.

Huges & Lancaster £372

EAST GRINSTEAD.—For completing house and making drives on the Coombe Hill Estate, for Mr. T. Gasson. Mr. C. Stanley Peach, architect, 8, John-street, Adelphi, W.C. Quantities by Mr. Henry Riley, 8, Buckingham-street, Adelphi, W.C. :—

Kirk & Randall	£3,940	Bulled & Co.	£3,497
E. Steer	3,931	Hammer	3,020
Holliday & Greenwood	3,677	Peters (for house only)	2,963
Wallis	3,549		

EAST MOLESEY.—For making up Feltham-road, Feltham-avenue, and Thames-road, for the Local Board. Mr. John Stevenson, Surveyor, East Molesey. Quantities not supplied :—

B. Cooke & Co.	£837 0 0	Free and Sons	£574 7 6
G. Wimpey & Co.	741 0 0	Woodham, Fry & Fry, Greenwich*	556 0 0
S. Kavanagh	640 0 0		
G. A. Franks	599 0 0		

*Provisionally accepted.

EPSOM.—For erecting new stabling, &c., at "The Wells," Epsom, for Major J. S. Strange. Mr. W. J. Shearburn, architect, Effingham House, Arundel-street, W.C., and at Dorking. Quantities by the architect ;—

Chivington	£1,085	Peters, Horsham *	£967
Canter	1,030		

* Accepted.

HARROW.—Accepted for works of tar-paving, kerbing and channelling, Gayton-road and Lower-road, for the Local Board. Mr. E. R. Capon, Surveyor, High-street, Harrow :—

		Per yd. run. s.	d.
Kerbing	H. Drury, Wealdstone	6	6
Channelling	H. Drury, Wealdstone	6	6
Tar-paving	W. E. Constable & Co.	2	2

HARROW.—For making-up Roxborough Park-road, for the Local Board. Mr. E. R. Capon, Surveyor, High-street, Harrow :—

W. T. Hall, Rugby £2,640 0 0
H. Drury, Wealdstone (accepted) 2,600 0 0

HEBBURN.—Accepted for making up Bell, Coquet, Wreigh, and other streets, for the Local Board. Mr. Jas. McMillan, Surveyor, Local Board Offices, Hebburn. Quantities by the Surveyor :—

George Maughan, Albert-road, Jarrow £1,149 16 0

HIGH WYCOMBE.—For new science and art schools, High Wycombe, Bucks. Mr. Arthur Vernon, architect, High Wycombe :—

G. H. & A. Bywaters	£2,938 0	H. Harris	£2,122 10
J. Barker & Co.	2,838 0	Loosley, Son, & Pearce	2,077 0
W. Gladding	2,548 0	G. H. Gibson	2,042 0
C. H. Hunt	2,397 0	Nash and Sons	2,037 0
H. T. Dickens	2 198 0	H. Flint	1,984 0
S. Grist	2,188 0		

HENDON.—For sewering, levelling, kerbing, channelling, paving, metalling, &c., Elm-terrace, Child's Hill, for the Hendon Local Board. Mr. S. S. Grimley, Engineer :—

	A. £ s. d.	B. £ s. d.	C. £ s. d.	D. £ s. d.	E. £ s. d.
H. Weldon	1,234 13 2	1,219 18 2	1,205 3 2	7 0	9 0
G. Bell	1,025 0 0	1,005 0 0	1,005 0 0	7 0	11 0
Mowlem & Co.	953 0 0	942 0 0	936 0 0	7 0	12 6
G. Osenton	937 0 0	937 0 0	937 0 0	7 0	12 0
Nowell & Robson	904 17 3	894 17 3	884 17 3	*	*
Cooke & Co.	894 0 0	888 0 0	882 0 0	7 0	15 0
Neave & Son	860 0 0	845 0 0	825 0 0	5 0	8 0
J. Meston	847 0 0	843 0 0	833 0 0	5 0	9 6
Eli Wilson	842 0 0	837 0 0	827 0 0	6 0	8 0
R. Ballard, Child's Hill †	796 6 4	777 0 0	770 0 0	5 3	9 0

[Surveyor's Estimate, £745 13 9].

A. Amount of Tender No. 1, for Hand-picked Flints (metalling), including new sewer and every expense.

B. Amount of Tender No 2, for Ironstone Slag, in lieu of Hand-picked Flints, including new sewer and every expense.

C. Amount of Tender No. 3, for Coarse-screened Gravel, in lieu of Hand-picked Flints, including new sewer and every expense.

D. Price for Brick Rubbish Foundation, per cube yard, thickness to be measured after rolling.

E. Price for Rough Slag Foundation, per yard cube.

* Omitted.

† Accepted by Committee, subject to confirmation by the Board.

HENDON.—For sewering, levelling, kerbing, channelling, paving, metalling, &c., West Heath-road, Child's Hill, for the Hendon Local Board. Mr. S. S. Grimley, Engineer :—

	A. £ s. d.	B. £ s. d.	C. £ s. d.	D. £ s. d.	E. £ s. d.
George Osenton	6,596 13 0	6,596 0 0	6,596 0 0	7 0	12 0
G. Bell	6,300 0 0	6,106 0 0	6,106 0 0	7 0	11 0
B. Cooke & Co.	6,200 0 0	6,140 0 0	6,080 0 0	7 6	15 0
Mowlem & Co.	6,195 0 0	6,080 0 0	6,022 0 0	7 6	12 6
Nowell & Robson	6,172 12 6	5,982 12 6	5,969 12 6	*	*
Neave & Son	6,032 0 0	5,938 0 0	5,857 0 0	5 6	8 0
H. Weldon	6,023 12 0	5,916 3 9	5,807 19 6	7 0	9 0
Eli Wilson	5,457 0 0	5,268 0 0	5,237 0 0	6 0	8 0
J. Meston	5,447 0 0	5,325 0 0	5,245 0 0	5 6	9 6
R. Ballard, Child's Hill †	5,336 7 0	5,197 0 0	5,096 0 0	5 3	9 0

[Surveyor's Estimate, £5,773 6s. 5d.]

A. Amount of Tender No. 1, for Hand-picked Flints (metalling), including new sewer and every expense.

B. Amount of Tender No. 2, for Hard Ironstone Slag, in lieu of hand-picked flints, including new sewer and every expense.

C. Amount of Tender No. 3, for Coarse Screened Gravel, in lieu of hand-picked flints, including new sewer and every expense.

D. Price for Brick Rubbish Foundation, per yard cube, thickness to be measured after rolling.

E. Price for Rough Slag Foundation, per yard cube, thickness to be measured after rolling.

* Omitted.

† Accepted by committee, subject to confirmation by the Board.

HUNGERFORD.—For work at Farleigh, Hungerford Castle, for Lord Donington :—

Stephens, Bastow, & Co., Limited	£5,999 0	W. Webb	£4,777 0
Hatherly & Carr	5,697 0	Wilkins & Sons	4,339 0
W. Brock & Sons	5,500 0	John Smith	4,198 0
W. H. Francis	5,355 10	G. Moore	4,137 0
		J. Long & Sons	3,997 0

Revised tenders.

Long & Sons	£4,449 0	G. Moore (accepted)	£4,137 0

LEEK (Staffs).—For additions and alterations to Gaunt House, Derby-street, for Mr. Angelbeck. Mr. Ambrose Wood, architect, Regent House, Hanley, Staffs. Quantities by architect :—

J. T. Clark, Hanley (original estimate) £2,223 0 0
T. Grace, Leek (after making deductions) 1,840 0 0
C. Cornes, Hanley* 1,820 0 0

* After making deductions Cornes accepted.

LEIGHTON BUZZARD.—Accepted for alterations, repairs decorations, and hot-water heating on the low-pressure system, at Liscomb Park, for Mr. J. W. Brown. Mr. J. E. Walker, architect and surveyor, 84, Devonport-road, London, W. :—

E. A. Beer & Co., Islington £1,601 0 0

LONDON.—For building new dining and grill rooms at No. 45, Strand, for Mr. F. F. Ansties. Messrs. Dickinson & Paterson, architects, 5, John-street, Adelphi, W.C. :—

Kirk & Randall	£3,760	Dearing & Son	£2,635
Godden	3,140	Burman & Son	2,600
Patman & Fotheringham	2,823	Edwards & Medway	2,560
Anley	2,654	Turtle & Appleton, Clapham Junction (accepted)	2,470
Ansell	2,650		

LONDON.—For alterations at Tottenham Court-road, for Messrs. W. Thompson & Co. Mr. E. H. Abbott, architect :—

W. Shurmur	£348	J. Anley	£322

LONDON.—For new warehouse, Back Gravel-lane, Houndsditch. Mr. H. H. Waterman, architect :—

Charteris	£6,727	Patman & Fotheringham	£6,051
Ashby Bros.	6,675	Ashby & Horner	5,996
Calnan	6,381	Harris & Wardrop	5,987
Laurence & Son	6,375	W. Shurmur	5,450

LONDON.—For new warehouse at Hare Walk, Kingsland, for Messrs. Bennett & Co. Mr. W. D. Bullis, architect :—

Lawrence & Son	£2,614	Pritchard & Kenrick	£1,920
W. Shurmur	2,295		

LONDON.—For alterations, &c., at 61, Ludgate Hill, for Messrs. Straker & Co. Mr. H. Gardiner Gribble, architect. Quantities by Mr. Adam K. Ball :—

J. Rider Hunt	£707	Drew & Cadman	£551
Messrs. Sage & Co.	627	W. Shurmur	540

LONDON.—For new pavilions, chapel, dining-hall, &c., at the Workhouse, South Grove, E., for the Guardians of the Whitechapel Union. Mr. Bruce J. Capell, architect. Quantities by Mr. Max Clarke :—

W. Downs	£35,797	Perry & Co.	£34,576
Harris & Wardrop	35 422	Munday & Co.	34,255
Lawrence & Son	35,317	S. J. Jerrard	34,235
J. T. Chappell	35,235	J. Goodman	33,997
B. E. Nightingale	34,965	J. Pattison	33,873
Johnson & Co.	34,905	W. Shumur	33,781

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
Eight Cottages and Alterations to Municipal Buildings	Cashel Town Com. ..	.....	Mar. 27
Pair of Semi-detached Cottages	Maidenhead Artisans' Dwellings Co.	7 Guineas	do.
Scouring and Cleansing River, &c.	Somerset Drainage Commissioners	25*l.*	April 5

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Show-rooms, Offices, &c. Moorhead, Sheffield	Newton, Chambers & Co	Flockton & Gibbs	Mar. 21
Supply and Erection of Heating and Cooking Apparatus	Tredegar Union	W. L. Griffiths	do.
Soldiers' Institute, Woolwich	.....	Newman & Newman	do.
Pipe Sewer (12 in.), Dunscar Brow	Astley Bridge Loc. Bd.	W. J. Lomax	do.
Portland Cement, &c.	Aberdeen Twn Coun.	A. Smith	do.
Business Premises, Chapeltown, Sheffield	Barnsley British Co-op. Society, Lim.	Wade & Turner	do.
Retorts, Fire Bricks, &c.	Glasgow Town Coun.	*Official*	do.
Road Metal, &c. Wellingborough	Irthlingborough H. B.	do.	do.
Road Metal, &c. (4,800 tons), Oakham	Rutland C. C.	do.	do.
Gas and Water Pipes, &c.	Manchester, Sheffield, & Lincs. Ry. Co. ..	do.	do.
Construction of Swing Bridge (Hydraulic) Scheluwe	Rotterdam Communal Administration	do.	do.
*Sewers, &c.	Lewisham Bd. of Wks	do.	do.
Extension of Brick Bridge, Torquay	G. W. R. Co.	do.	Mar. 22
Goods Shed, &c. Torre	do.	do.	do.
Wrought-iron Girders (187 tons), London	do.	do.	do.
Erection of Two Purifiers, and Removal and Re-erection of Two others	Workington Twn C...	do.	do.
Purifier House, &c.	Workington Corp.	do.	do.
Additions, &c. to Church, Halton Holegate	.....	C. Hodgson Fowler ..	do.
Additions, &c. to Dwelling-house, Kidderminster	.....	J. M. Gething	do.
*Alterations, &c. to Small Pox Hospital ..	West Ham Union	F. J. Sturdy	do.
Additions, &c. to Workhouse	Huddersfield Union ..	J. Barraclough	do.
Road Metal, &c.	Havant R.S.A.	H. R. Trigg	do.
*Fire Escape Bridges at Infirmary	Holborn Union	H. Saxon Snell	do.
Four Double Houses, Batley	.....	H. B. Buckley	Mar. 23
Enlargement of Business Premises	Bradford Provident Industrial Society ..	Rycroft & Firth	do.
Flagging, Channelling, Road Metal, &c.	Clayton-le-Moors L. B.	A. Foster	do.
Additions, &c. to Public Baths	Rotherham Twn Coun.	C. B. Newton	do.
Fifteen Cottages, Rogerstone, Mon.	House Property and Investment Co.	T. Rees	do.
School Buildings	South Shields Sch. Bd.	H. Grieves	do.
Hospital	Skipton Local Board	Mr. North	do.
Gasholder Tank, &c.	Oundle (Yorks.) Gas Co.	J. Eunson	do.
Road Metal, &c. Boston	Holland Fen Highway Board	J. Eastgate	do.
*Sanitary Works, Newington Workhouse	St. Saviour's Union ..	Jarvis & Son	do.
Chapel, Pontardulais	Calvinistic Methodist Committee	J. E. Davies	do.
Granite Spalls (1,000 tons)	Kensington Union	*Official*	do.
Forming, Kerbing, Channelling, &c. (two streets)	Cardiff Corporation ..	do.	do.
Goods Shed, &c. Wigan	Wigan Junction Railway Co.	do.	do.
Erection and Supply of Three Steel Receivers	Corp. of Trinity House	do.	do.
Whinstone, &c. York	Bulmer East Highway Board	do.	do.
Paving Materials, Road Metal, &c.	Clerkenwell Vestry ..	do.	do.
Store House, &c Kingstown	Com. of Irish Lights..	do.	Mar. 24
Main Sewer and other Works	Luton Town Council	do.	do.
Levelling, Metalling, Kerbing, &c.	Rugby Local Board..	J. H. Brierley	do.
Sewering, Paving, Flagging, &c. (two streets)	Nelson Corporation ..	J. W. Bradley	do.
School Buildings, Llandaff	Managers of National Schools	Halliday & Anderson	do.
Drainage Works	Whitby Union	R. Lennard	do.
Stone Bridge, North Shields	Tynemouth U.R.S.A.	A. S. Dinning	do.
*Works and Materials	Walthamstow L. B. ..	G. W. Holmes	do.
*Sewer Works	do.	do.	do.
Business Premises, Six Houses, &c.	Dewsbury Pioneers Industrial Society ..	Holtom & Fox	do.
School Buildings, Dover	Managers of Christ Church District	E. W. Fry	Mar. 25
Sewerage and Sewage Disposal Works, Marchay	Belper R.S.A.	R. Argile	do.
School Buildings and other Works, Cardiff	Rev. Canon Thompson	E. M. Bruce-Vaughan	do.
Church Building, Kingsley Moor, Stoke-upon-Trent	.....	Mr. Whitehouse	do.
School-room and Master's House, Caerphilly	Eglwysilan Sch. Bd...	T. Rowland	do.
Dwelling-house, &c. Weston-super-Mare	.....	J. S. Wilde	do.
Whinstone (6,000 tons), Beverley	East Riding C. C.	A. Beaumont	do.
School Buildings, New Pallas, Ireland	Rev. J. Sullivan	.....	do.
*Road Works	Middlesex C. C.	*Official*	do.
Reconstruction, &c. of Sluice Gates	Charente Prefecture.	do.	do.
Road Metal, Cement, &c.	Finchley Local Board	do.	Mar. 27
Twenty Semi-detached Villas, Aberamon	.....	G. A. Trehearne	do.
Forming, Metalling, Sewering, &c. Poole	Heckford Park Estate	H. F. J. Barnes	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Paving Works (8,400 sq. yds.)	Dukinfield Local Bd.	H. Veevers	Mar. 2
*New Main Sewers, &c.	Bournemouth T. C. ..	F. W. Lacey	do.
*Aberdeen Granite Kerb	Kingston-on-Thames Corp.	*Official*	do.
Stoneware Pipes, Bricks, Lime, &c.	Swindon New Town Local Board	H. J. Harrap	do.
Alterations to Caledonian Hotel, Carlisle	.....	J. Armstrong	do.
Business Premises, Leeds	.....	T. Winn	do.
Two Semi-detached Villas, Thorpe, Yorks	Capt. J. Hunter	R. Lennard	do.
*Technical Schools and Free Library	Widnes Corporation..	Woodhouse & Willoughby	Mar. 2
Hotel and Boarding-house, Redruth	.....	A. H. Jenkin	do.
Supply of Turned and Bored Pipes	Ulverston Local Bd.	J. S. Swan	do.
Flint and Granite Road Metal, &c.	Malling U.R.S.A.	J. Ennals	do.
School Buildings, Waterfoot	Rawtenstall Sch. Bd.	T. Bell	do.
*Wood Paving Works	Hackney Bd. of Wks.	J. Lovegrove	do.
Hospital, Bangor, Wales	The Committee	J. Gill	do.
Re-paving of Market	Burslem Corporation..	F. Bettany	do.
Levelling, Paving, Metalling, &c.	Eastbourne Twn Coun.	C. Tomes	do.
School Buildings	Briton Ferry Sch. Bd.	H. F. Clarke	do.
Extension and Alteration of Markets	Manchester Corp.	J. Allison	Mar.
Cold Storage Rooms, &c.	do.	M. C. Bannister	do.
*Three Water Carts, One Water Van, and Three Flushing Vans	Islington Vestry	J. Patten Barber	do.
*Making-up and Tar-paving Road	Fulham Vestry	W. Sykes	do.
*Re-roofing St. David's Church, Neath	The Churchwardens..	*Official*	do.
Reservoir, Tanks, &c.	Church Stretton Water Co.	do.	do.
Assembly Hall, &c. Stornoway	Free Church Com.	J. Robertson	Mar.
Additions to Business Premises, Cork	T. J. Lipton	R. Walker	do.
*Twenty-three Houses, Catford, S.E.	.....	F. & W. Stocker	do.
*Urinal, Old Gravel-lane	St. George-in-the-East Vestry	*Official*	do.
*Roadmaking, &c. Works	Tonbridge U.R.S.A.	W. Oakley	do.
*Erection of Four Small Houses, Barnet ..	.....	.....	Mar.
Air Vessel and other Works at Waterworks	Braintree Local Board	J. H. Jehons	do.
Granite Road Metal, Kerbs, Setts, &c. ..	King's Lynn Corp.	E. J. Silcock	do.
Hotel Premises, Llanbradach	Taff Vale Brewery	J. Williams	do.
Additions to Corn Exchange, Peterborough	.....	H. M. Townsend	do.
Cottage at Waterworks	Braintree Local Board	J. H. Jehons	do.
Flagging, Kerbing, &c.	Burnley Town Council	F. S. Button	April
Decoration of Town Hall	Paisley Town Council	.....	April
Dwelling House, Greystones, Ireland	Rev. Father Lieby	P. F. Coniber	do.
School Building	Tavistock Grammar School Committee ..	.....	April
Flint, Road Metal, &c.	Braintree Local Board	*Official*	do.
Laying and Supply of Water Main	Queenborough T.C.	do.	April
Show Yard Building, Belfast	North East Ireland Agricultural Assoc...	J. Boyd	April
Recreation Room, &c. Fishponds, Bristol.	Diocesan Training College	W. L. Bernard	April
Gasholder Tank	Manchester Corp.	*Official*	do.
Road Metal, &c.	Wanstead Local Board	do.	do.
*Drainage and other Works, Seaford	.....	G. A. Wallis	April
*Sewerage Works, Weybridge and Oatland	Chertsey R.S.A.	W. H. Radford	April
C.I. Sewerage Pipes, 18-in. &c. (7 miles)	do.	do.	do.
Construction of Bridge, Santander	Spanish Ministry of Public Works	*Official*	April
*New Council Buildings	Staffordshire C.C.	H. J. Hare	do.
School Buildings, Mansfield	Brunts' Technical Sch. Committee	Evans & Jolly	No Da
Excavating Work, Bradford	.....	J. H. Dixon	do.
Warehouse, Cursitor-street, E.C.	.....	Satchell & Edwards	do.
*Construction of Bridge, Bardney	.....	.....	do.
Extension of School Buildings, New Mills	Hague Bar Sch. Bd.	E. Godward	do.
Laying and Supplying 4,800 sq. yds. Whinstone	Motherwell (N. B.) Police Commissioners	*Official*	do.
Grit Setts, 6-in. 1,500 tons	Manchester Highway Committee	do.	do.
*Purchase of Materials, Pulling-down, &c. Houses	Acton Local Board	do.	do.
*Windsor Chairs for Library	.....	C. J. Ferguson	do.
Seven Houses, Leeds	Mr. Pawe	.....	do.
Boathouse, York	White Rose Amateur Rowing Club	.....	do.
School Buildings Derby	Denby Colliery	.....	do.
New Street Works, Armley	J. Jackson	.....	do.
Washhouse, &c. Aspatria	J. Matthews	.....	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Surveyor and Inspector of Nuisances ..	Eton Union	150*l.* per annum	Mar.
*Surveyor's Sanitary Inspector, &c.	Dodworth Local Bd.	.....	Mar.
*Surveyor	Sutton (Surrey) Local Board	250*l.*	Mar.
*Road Foreman	Vestry of Hersell	.....	Mar.
*Assistant Surveyor	East Barnet Valley Local Board	125*l.* per annum	do.
*Road Surveyor	Hackney Bd. of Wks.	2*l.* 10s. weekly	Mar.
*Road Foreman	City of Birmingham ..	2*l.*	Mar.

Those marked with an Asterisk (*) are advertised in this number. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, pp.* xx. *and* xxi.

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riano-av., Camden-town, u.t. 51 yrs., g.r. 4*l.* 12s. 6d., r. 42*l.*, 375*l.*—By *Fleuret, Sons & Adams:* F.g.r. of 43*l.* 10s., Hensloŵe-rd., Dulwich, reversion in 83 yrs., 330*l.*; f.g.r. of 27*l.*, Poplar Cottages, Sutton, ditto, in 82 yrs., 455*l.*; "The Hollies" and "Lennox Villa," Southgate, u.t. 87 yrs., g.r. 14*l.* 14s., r. 64*l.*, 600*l.*; 66 to 70, Warren-rd., Croydon, f., 1,300*l.*; 14A, Prince-st., Bermondsey, u.t. 3 yrs., g.r. 2*l.*, 27*l.*—By *Debenham Tewson & Co.:* Nos. 122, 124, 126, Old Kent-rd., f., r. 175*l.*, 2,770*l.*; f.g.r. of 5*l.*, Clarence-st., reversion in 5½ yrs., 500*l.*; 1 to 6, Munro-ter., Chelsea, u.t. 85 yrs., g.r. 150*l.*, r. 467*l.*, 330*l.*; f.g.r. of 28*l.* 13s. 6d., Commercial-rd., Peckham, reversion in 26 yrs., 1,230*l.*; f.g.r. of 11*l.* 4s., Camden-street, reversion in 19 yrs., 570*l.*; 24 to 36 (even), Commercial-rd., f., r. 208*l.*, 2,690*l.*; 1, 3 to 7, Camden-st., f., r. 122*l.*, 1,765*l.*; 12 and 13, Camden-st., f., r. 40*l.*, 650*l.*; 1 to 14, Camden-av., f., r. 420*l.*, 6,710*l.*—By *Worsfold & Hayward* (At Dover): 93, Maison Dieu-rd., Dover, f. 750*l.*

MARCH 8.—By *M. Hubbard:* 80 and 82, Templar-rd., Homerton, u.t. 71 yrs., g.r. 9*l.*, 360*l.*—By *A. Prevost & Son:* No. 237, Mile End-rd., f., r. 100*l.*, 2,400*l.*—By *Bisley & Sons:* 51 and 53, The Grange, Bermondsey, f., 610*l.*—By *H. Oughton & Sons:* 1 to 6, South Parade, Chelsea, and 3, York Mews, f., area 9,064 ft., 5,310*l.*; 19, Wood-st., Bishopsgate, f., r. 45*l.*, 835*l.*; 1, Bywater-st., Chelsea, u.t. 16 yrs., g.r. 5*l.* 5s., r. 30*l.*, 215*l.*

MARCH 9.—By *Newbon & Co.:* 1, Pitt-st., Tottenham Ct.-rd, f., r. 57*l.*, 695*l.*; 1, 3, and 5, Bryan-st., Caledonian-rd., u.t. 59 yrs., g.r. 15s., r. 125*l.*, 860*l.*; 93, Brecknock-rd., Camden-town, u.t. 47 yrs., g.r. 5*l.* 10s., 420*l.*; f.g.r. of 17*l.* 17s., Market-pl., Tottenham, reversion in 76 yrs., 375*l.*; 17 and 19, Somerfield-rd., Finsbury-pk., u.t. 73 yrs., g.r. 14*l.* 14s., r. 80*l.*, 690*l.*; 45 and 87, Finsbury pk.-rd. u.t. 73 yrs., g.r. 18*l.* 18s., r. 86*l.*, 800*l.*—By *Glover & Harrison:* 118, Drummond-st., Euston-rd., u.t. 18 yrs. g.r. 1*l.*, r. 50*l.*, 350*l.*—By *Stimson & Sons:* 49, Carter-st., Walworth, u.t. 52 yrs., g.r. 5*l.* 15s. 6d., 300*l.*; 51, Olney-st., u.t. 22 yrs., g.r. 4*l.* 10s., r. 30*l.*, 160*l.*; i.g.r. of 35*l.* 11s., Gloucester Cottages, Mortlake, u.t. 57 yrs., g.r. 8*l.* 15s.; i.g.r. of 40*l.*, Queen's-pl., u.t. 54 yrs., g.r. 16*l.* 16s., 580*l.*; i.g.r. of 47*l.*, Spa-rd., Bermondsey, u.t. 23 yrs., g.r., 23*l.* 2s., 300*l.*; 137 & 139, Coburg-rd., Old Kent-rd., and 171A, 171 to 175, Neate-st., u.t. 26 yrs., g.r. 36*l.*, 600*l.*; 20, Kinglake-st., u.t. 14 yrs., g.r. 3*l.*, 65*l.*; 1 to 7 (odd), Bagshot-st., u.t. 14 yrs., g.r. 9*l.* 5s., 250*l.*; 17 & 18, Cancel-st., Walworth, u.t. 12 yrs., g.r., 8*l.*, 150*l.*; 11 & 13, Briant-st., New Cross, u.t. 27 yrs, g.r. 3*l.*, 265*l.*; 18, Mostyn-rd., Brixton, u.t. 70 yrs., g.r. 5*l.* 5s., 265*l.*; 22 to 28, even, Appian-rd., Old Ford-rd., u.t. 70 yrs., g.r. 14*l.*, 300*l.*; 21 & 25, Andalus-rd., Clapham, u.t. 82 yrs., g.r. 12*l.*, r. 56*l.*, 455*l.*—By *C. C. & T. Moore:* 53, Brook-st., Ratcliff, c., 150*l.*; 5, Prince's-st., St. George's-in-East, c., 200*l.*; 6, Wellclose-sq., f., r. 50*l.*, 570*l.*; 16 & 16½, Wellclose-sq., f., 415*l.*; 36A, Gower-walk, f., 300*l.*; i.g.r., of 30*l.*, Christian-st., &c., u.t. 8¾ yrs., g.r. 10*l.*, 90*l.*; i.g.r. of 21*l.* 10s., New Ivy-st., Hoxton, u.t. 31 yrs., g.r. 9*l.*, 155*l.*; "Rosedale," Buckingham-rd., Woodford, f., r. 26*l.*, 340*l.*

MARCH 10.—By *Warlters & Lovejoy:* 50 to 56 even, East-rd., Plaistow, f., r. 102*l.* 14s., 1,070*l.*; eight plots of land, Cambridge-pk. and Lonsdale-rd. Leytonstone, 570*l.*; 2 to 5, St. Thomas-rd., Harlesden, u.t. 95 yrs., g.r. 20*l.*, 1,010*l.*; 4, Green Lanes-ter., Highbury, u.t. 77 yrs., g.r. 7*l.* r. 36*l.*, 360*l.*; 1 to 6, Salisbury-ter., Southgate, u.t. 91 yrs., g.r. 27*l.*, 900*l.*; 4 to 7, Alfred-ter., u.t. 97 yrs., g.r. 20*l.*, 890*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	9/0/0 — 0/0/0
Teak, E.I.	load	9/0/0 — 15/0/0
Sequoia, U.S.ft.cu.		2/3 — 2/6
Ash, Canada	load	2/10/0 — 4/0/0
Birch, do.		3/5/0 — 4/10/0
Elm, do.		3/10/0 — 4/10/0
Fir, Dantsic, &c.		1/10/0 — 3/5/0
Oak, do.		3/0/0 — 5/5/0
Canada		5/10/0 — 7/0/0
Pine, Canada red		2/10/0 — 3/10/0
Do. Yellow		2/10/0 — 4/10/0
Lath, D'ntsic, fath		5/0/0 — 6/0/0
St. Petersburg		5/0/0 — 7/0/0
Deals, Finland 2nd & 1st std	100	7/0/0 — 9/10/0
Do. 4th & 3rd		6/10/0 — 7/0/0
Do. Riga		6/10/0 — 8/0/0
St. Petersburg, 1st yellow		10/0/0 — 14/0/0
Do. 2nd yellow		8/0/0 — 9/0/0
Do. white		7/10/0 — 9/10/0
Swedish		7/0/0 — 15/10/0
White Sea		8/0/0 — 16/10/0
Canada, Pine 1st		21/0/0 — 27/10/0
Do. do. 2nd		15/0/0 — 17/0/0
Do. do. 3rd &c.		7/10/0 — 10/0/0
Do. Spruce, 1st		8/10/0 — 11/0/0
Do. do. 3rd & 2nd		6/15/0 — 8/0/0
New Brunswick		6/10/0 — 7/10/0
Battens, all kinds		3/0/0 — 15/0/0
Flooring boards, sq., 1 in. prep. 1st		0/8/6 — 0/14/6
Do. 2nd		0/7/6 — 0/10/6
Other qualities—		0/4/0 — 0/7/6
Cedar, Cuba	ft.	/4 — /4½
Honduras, &c		/3½ — /4½
Mahogany, Cuba		/4½ — /6½
St. Domingo, cargo av.		/4 — 1/6
Mexican do. do.		/3½ — /4½
Tobasco do. do.		/3½ — /6½
Honduras do.		/4½ — /6
Box, Turkey	ton	4/0/0 — 13/0/0
Rose, Rio		9/0/0 — 20/0/0
Bahia		8/0/0 — 18/0/0
Satin, St. Domingo	ft.	0/0/6 — 0/1/3
Porto Rico		0/0/7 — 0/1/6

TIMBER (*continued*).

Walnut, Italian		0/0/3½ — 0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/0/10½ — 0/0/0
Bar, Welsh, in London		5/17/6 — 6/0/0
Do. do. at works in Wales		5/7/6 — 5/10/0
Do. Staffordshire, in London		6/0/0 — 6/10/0
COPPER—British, cake and ingot		48/0/0 — 48/10/0
Best selected		49/10/0 — 50/0/0
Sheets, strong		57/0/0 — 58/0/0
Chili, bars		45/8/9 — 45/16/3
YELLOWMETAL	lb	0/4 11-16 — 0/5½
LEAD—Pig, Spanish	ton	9/16/3 — 9/17/6
English com. brands		9/17/6 — 10/0/0
Sheet, English, 6 lbs. per sq. ft. and upwards		11/10/0 — 0/0/0
Pipe		12/0/0 — 0/0/0
ZINC—English sheet	ton	21/10/0 — 0/0/0
Vieille Montagne		22/0/0 — 0/0/0
TIN—Straits		94/10/0 — 95/0/0
Australian		95/0/0 — 95/10/0
English Ingots		98/10/0 — 99/0/0
Banca		94/5/0 — 94/10/0
Billiton		94/0/0 — 94/10/0

OILS.

Linseed	ton	21/10/0 — 21/15/0
Cocoanut, Cochin		30/10/0 — 0/0/c
Do. Ceylon		28/10/0 — 0/0/0
Palm, Lagos		33/10/0 — 0/0/0
Rapeseed, English pale		26/10/0 — 0/0/0
Do. brown		25/0/0 — 0/0/0
Cottonseed ref.		25/0/0 — 0/0/0
Oleine		23/0/0 — 24/0/0
Lubricating, U.S.		4/0/0 — 5/0/0
Do. refined		5/10/0 — 12/0/0
TAR—Stockholm	barrel	0/17/6 — 0/18/6
Archangel		0/12/6 — 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 12 noon on Thursdays.*]

BARMOUTH.—Accepted for drains, air inlets, and ventilators for eleven houses, Marine-terrace. Messrs. Thomas Roberts & Son, engineers, Portmadoc :—

Hugh Jones, Barmouth £175 0 0

BARNET.—For refitting shop at High-street, High Barnet. Mr. C. Shiner, architect :—

Drew & Cadman	£383	Yardley & Son	£325
W. Vanstone	334		

BARRY (Glamorganshire).—For erecting a house for Dr. Powell Barry. Messrs. James & Morgan, architects, Charles-street Chambers, Cardiff :—

D. Davies	£2,139 0	D. & J. Horner	£1,772 5
D. J. Davies	2,120 0	W. Richards	1,600 0
Stephens, Bastow, & Co., Limited	1,947 0	H. J. Money	1,580 0
Richards & Cranston	1,794 0	F. Small	1,495 0

BEVERLEY.—For the erection of a boiler-house, chimney-shaft, &c., East Riding Asylum, Beverley. Messrs. Hawe & Foley, architects, Beverley. Quantities supplied :—

Geo. Jackson & Sons	£1,620	Holden & Myles, Stalybridge (accepted)	1,427
J. R. Foley	1,510		
G. & R. Pape	1,498		

BEXHILL (Sussex).—For making-up, metalling, paving, kerbing, &c., Hamilton, Windsor, Lower Sea, and other roads for the Local Board. Mr. Sydney Smith, Surveyor, Dorset Cottage, Bexhill, Sussex :—

P. Jenkins	£6,531	G. Marchant	£5,658
J. W. Webb	6,171	H. Eldridge †	1,747
Laurence	5,910	H. Spencer ‡	1,789
S. Hudson, Streatham *	5,767		

* Accepted.

† Three roads only. ‡ Two roads only.

BISHAM.—For the erection of a house at Bisham, Berks., for Mr. Percival Harter. Messrs. Kidner & Berry, architects, 23, Old Broad-street, London, E.C. :—

Silver & Son	£7,769	W. Watson	£7,376
Lawrance & Sons	7,736	Parnell & Son	7,144
Y. J. Lovell	7,641	S. J. Scott*	7,076
Webster & Cannon	7,383		

*Accepted.

BRIDGEND (Glamorgan).—For the erection of St. Iltyd's Church, Bridgend. Mr. E. M. Bruce Vaughan, architect :—

Wellcock & Co.	£2,800	Stephens, Bastow, & Co.	£2,498
Jenkins Bros.	2,530	Claridge & Bloxham	2,284
Shipton & Sons	2,508	E. Rees, Pencoed*	1,895

* Accepted.

BRISTOL.—For the erection of "The Grand Pump Room and Spa," at Clifton, Bristol, for Mr. George Newnes, M.P. Messrs. Marks, Munro, & Son, architects, Bristol and Birmingham :—

Going & Ingram	£6,885 0	G. Humphreys	£5,774 0
J. E. Davis	6,240 0	Cowlin & Son	5,543 0
Wilkins & Sons	6,189 0	W. Church	5,320 0
Eastabrook & Sons	5,998 0	A. J. Beaven, Bristol*	4,900 0
F. T. Hatherly	5,997 0	C. A. Hayes	4,839 0
F. A. Forse	5,919 15		

*Accepted.

BURNLEY.—Accepted for the erection of two shops and dwelling houses, Clitheroe-road, Brierley. Mr. Jas. T. Landless, architect, Manchester-road, Nelson, Lancs. :—

Mason.—Geo. Hunter, Brierfield		£430	0 0
Joiner.—Jas Hudson	,,	190	0 0
Plumber.—C. Tattersall	,,	65	0 0
Plasterer.—John Hartley, Nelson		35	0 0
Slater.—Wm. Stamworth, Burnley		25	0 0

BUSHBY (Leicestershire).—For the erection of a conservatory for Mr. J. E. Kirby. Messrs. Miles & Beasley, architects, Leicester :—

W. J. Iliffe	£159 15	Hardy, Bruin & Co.	£100 10
Messenger & Co.	152 15	T. Sharman	94 10
Haywood & Co.	118 4	C. Wright	90 10

BURTON-ON-TRENT.—For the erection of a block of two residences, Blackpool-street, Burton, for Mr. C. O. Hall. Mr. R. E. Carpenter, architect, Burton. Quantities by the architect :—

H. Edwards	£1,100 0	Hodges	£1,000 0
Lowe & Sons	1,091 7	T. Chamberlain*	978 16

* Accepted.

CARDIFF.—For the construction of sewers, Tyndall and Herbert streets, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff. Quantities by the Borough Engineer :—

J. Rees	£5,709 0	J. Allan (accepted)	£3,360
J. Strachan	3,568 14		

CARDIFF.—For the reconstruction of brick sewers, Severn and Richmond roads, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff. Quantities by the Borough Engineer :—

Severn-road.

J. Allan	£895 0	Ellis & Davies	£800 9
F. Ashley	816 5	R. Smith	761 15
J. Rich	803 0	T. Rees (accepted)	759 5

Richmond-road.

J. Allan	£3,428 5	R. Smith (accepted)	£2,528 10
F. Ashley	3,280 0	T. Rees	2,380 5
Ellis & Davies	3,193 5		

CARDIFF.—For rebuilding No. 87, St. Mary-street, Cardiff, for Mr. James Howell. Messrs. J. P. Jones, Richards, & Budgen, architects. Quantities by the architects :—

Rees, Gibbon, & Thomas	£2,807 16 9	D. J. Davies	£2,550 0 0
Jones & Co.	2,779 0 0	C. C. Dunn	2,455 0 0
Jones Bros.	2,650 0 0	James Allan*	2,356 3 6

*Accepted.

CARNFORTH.—Accepted for the erection of extensive additions to business premises, for the Co-operative Society. Mr. Robt. Walker, architect, Windermere. Quantities by the architect :—

Masons' Work and Walling.—J. Rigg & Son, Carnforth	£786 16 6
Slating.—W. Atkinson, Leeds	97 18 0
Joiners' Work.—W. Wilson, Carnforth	388 0 0
Plastering and Fireproof Floors.—W. Howarth, Berwick	118 18 6
Plumbing, Painting, and Glazing.—J. R. Turner, Kendal	136 0 0

CHELMSFORD.—Accepted for laying about 400 yards of 4-in. C.I. water-main for the Corporation. Mr. G. H. Sasse, Borough Surveyor, 14, Museum-terrace, London-road, Chelmsford :—

Jarrow, Chelmsford (at schedule of prices).

CHEPSTOW.—For the erection of a cattle market near the railway-station, for the Local Board. Mr. J. H. Atkins, Surveyor :—

H. Welsh	£5,500 0	Edwd. Finch & Co., Limited	£3,149 0
Alfred King & Sons	3,437 0	Cuthbert William Whalley	2,808 5
John Linton	3,250 0		

DORKING.—For the construction of additional sludge-pit, filter-beds, &c. (contract No. 6), for the District Local Board. Mr. James Lemon, M.Inst.C.E., 9, Victoria-street, Westminster, S.W. :—

Facey	£7,000	J. Butt	£5,696
J. Jackson	5,900	B. Cooke & Co.	5,374
Hall	5,700	Peters	5,087

Contract No. 7.

Bowes, Scott, & Co. £215

Contract No. 8.

Huges & Lancaster £372

EAST GRINSTEAD.—For completing house and making drives on the Coombe Hill Estate, for Mr. T. Gasson. Mr. C. Stanley Peach, architect, 8, John-street, Adelphi, W.C. Quantities by Mr. Henry Riley, 8, Buckingham-street, Adelphi, W.C. :—

Kirk & Randall	£3,940	Bulled & Co.	£3,497
E. Steer	3,931	Hammer	3,020
Holliday & Greenwood	3,677	Peters (for house only)	2,963
Wallis	3,549		

EAST MOLESEY.—For making up Feltham-road, Feltham-avenue, and Thames-road, for the Local Board. Mr. John Stevenson, Surveyor, East Molesey. Quantities not supplied :—

B. Cooke & Co.	£837 0 0	Free and Sons	£574 7 6
G. Wimpey & Co.	741 0 0	Woodham, Fry & Fry, Greenwich*	556 0 0
S. Kavanagh	640 0 0		
G. A. Franks	599 0 0		

*Provisionally accepted.

EPSOM.—For erecting new stabling, &c., at "The Wells," Epsom, for Major J. S. Strange. Mr. W. J. Shearburn, architect, Effingham House, Arundel-street, W.C., and at Dorking. Quantities by the architect ;—

Chivington	£1,085	Peters, Horsham *	£967
Canter	1,030		

* Accepted.

HARROW.—Accepted for works of tar-paving, kerbing and channelling, Gayton-road and Lower-road, for the Local Board. Mr. E. R. Capon, Surveyor, High-street, Harrow :—

		Per yd. run. s. d.
Kerbing	H. Drury, Wealdstone	6 6
Channelling	H. Drury, Wealdstone	6 3
Tar-paving	W. E. Constable & Co.	2 2

HARROW.—For making-up Roxborough Park-road, for the Local Board. Mr. E. R. Capon, Surveyor, High-street, Harrow :—

W. T. Hall, Rugby	£2,640 0 0
H. Drury, Wealdstone (accepted)	2,600 0 0

HEBBURN.—Accepted for making up Bell, Coquet, Wreigh, and other streets, for the Local Board. Mr. Jas. McMillan, Surveyor, Local Board Offices, Hebburn. Quantities by the Surveyor :—

George Maughan, Albert-road, Jarrow £1,149 16 0

HIGH WYCOMBE.—For new science and art schools, High Wycombe, Bucks. Mr. Arthur Vernon, architect, High Wycombe :—

G. H. & A. Bywaters	£2,938 0	H. Harris	£2,122 10
J. Barker & Co.	2,838 0	Loosley, Son, & Pearce	2,077 0
W. Gladding	2,548 0	G. H. Gibson	2,042 0
C. H. Hunt	2,397 0	Nash and Sons	2,037 0
H. T. Dickens	2 198 0	H. Flint	1,984 0
S. Grist	2,188 0		

HENDON.—For sewering, levelling, kerbing, channelling, paving, metalling, &c., Elm-terrace, Child's Hill, for the Hendon Local Board. Mr. S. S. Grimley, Engineer :—

	A. £ s. d.	B. £ s. d.	C. £ s. d.	D. £ s. d.	E. £ s. d.
H. Weldon	1,234 13 2	1,219 18 2	1,205 3 2	7 0	9 0
G. Bell	1,025 0 0	1,005 0 0	1,005 0 0	7 0	11 0
Mowlem & Co.	953 0 0	942 0 0	936 0 0	7 0	12 6
G. Osenton	937 0 0	937 0 0	937 0 0	7 0	12 0
Nowell & Robson	904 17 3	894 17 3	884 17 3	*	*
Cooke & Co.	894 0 0	888 0 0	882 0 0	7 0	15 0
Neave & Son	860 0 0	845 0 0	825 0 0	5 0	8 0
J. Meston	847 0 0	843 0 0	833 0 0	5 0	9 6
Eli Wilson	842 0 0	837 0 0	827 0 0	6 0	8 0
R. Ballard, Child's Hill †	796 6 4	777 0 0	770 0 0	5 3	9 0

[Surveyor's Estimate, £745 13 9].

A. Amount of Tender No. 1, for Hand-picked Flints (metalling), including new sewer and every expense.

B. Amount of Tender No 2, for Ironstone Slag, in lieu of Hand-picked Flints, including new sewer and every expense.

C. Amount of Tender No. 3, for Coarse-screened Gravel, in lieu of Hand-picked Flints, including new sewer and every expense.

D. Price for Brick Rubbish Foundation, per cube yard, thickness to be measured after rolling.

E. Price for Rough Slag Foundation, per yard cube.

* Omitted.

† Accepted by Committee, subject to confirmation by the Board.

HENDON.—For sewering, levelling, kerbing, channelling, paving, metalling, &c., West Heath-road, Child's Hill, for the Hendon Local Board. Mr. S. S. Grimley, Engineer :—

	A. £ s. d.	B. £ s. d.	C. £ s. d.	D. £ s. d.	E. £ s. d.
George Osenton	6,596 13 0	6,596 0 0	6,596 0 0	7 0	12 0
G. Bell	6,300 0 0	6,106 0 0	6,106 0 0	7 0	11 0
B. Cooke & Co.	6,200 0 0	6,140 0 0	6,080 0 0	7 0	15 0
Mowlem & Co.	6,195 0 0	6,080 0 0	6,022 0 0	7 0	12 6
Nowell & Robson	6,172 12 6	5,982 12 6	5,962 12 6	*	*
Neave & Son	6,032 0 0	5,938 0 0	5,857 0 0	5 6	8 0
H. Weldon	6,023 12 0	5,916 3 9	5,807 19 6	7 0	9 0
Eli Wilson	5,457 0 0	5,268 0 0	5,237 0 0	6 0	8 0
J. Meston	5,447 0 0	5,325 0 0	5,245 0 0	5 6	9 6
R. Ballard, Child's Hill †	5,336 7 0	5,197 0 0	5,096 0 0	5 3	9 0

[Surveyor's Estimate, £5,773 6s. 5d.]

A. Amount of Tender No. 1, for Hand-picked Flints (metalling), including new sewer and every expense.

B. Amount of Tender No. 2, for Hard Ironstone Slag, in lieu of hand-picked flints, including new sewer and every expense.

C. Amount of Tender No. 3, for Coarse Screened Gravel, in lieu of hand-picked flints, including new sewer and every expense.

D. Price for Brick Rubbish Foundation, per yard cube, thickness to be measured after rolling.

E. Price for Rough Slag Foundation, per yard cube, thickness to be measured after rolling.

* Omitted.

† Accepted by committee, subject to confirmation by the Board.

HUNGERFORD.—For work at Farleigh, Hungerford Castle, for Lord Donington :—

Stephens, Bastow, & Co., Limited	£5,999 0	W. Webb	£4,777 0
Hatherly & Carr	5,697 0	Wilkins & Sons	4,339 0
W. Brock & Sons	5,500 0	John Smith	4,198 0
W. H. Francis	5,355 10	G. Moore	4,137 0
		J. Long & Sons	3,997 0

Revised tenders.

Long & Sons	£4,449 0	G. Moore (accepted)	£4,137 0

LEEK (Staffs).—For additions and alterations to Gaunt House, Derby-street, for Mr. Angelbeck. Mr. Ambrose Wood, architect, Regent House, Hanley, Staffs. Quantities by architect :—

J. T. Clark, Hanley (original estimate)	£2,223 0 0
T. Grace, Leek (after making deductions)	1,840 0 0
C. Cornes, Hanley*	1,820 0 0

* After making deductions Cornes accepted.

LEIGHTON BUZZARD.—Accepted for alterations, repairs decorations, and hot-water heating on the low-pressure system, at Liscomb Park, for Mr. J. W. Brown. Mr. J. E. Walker, architect and surveyor, 84, Devonport-road, London, W. :—

E. A. Beer & Co., Islington £1,601 0 0

LONDON.—For building new dining and grill rooms at No. 45, Strand, for Mr. F. F. Ansties. Messrs. Dickinson & Paterson, architects, 5, John-street, Adelphi, W.C. :—

Kirk & Randall	£3,760	Dearing & Son	£2,635
Godden	3,140	Burman & Son	2,600
Patman & Fotheringham	2,823	Edwards & Medway	2,560
Anley	2,654	Turtle & Appleton, Clapham Junction (accepted)	2,470
Ansell	2,650		

LONDON.—For alterations at Tottenham Court-road, for Messrs. W. Thompson & Co. Mr. E. H. Abbott, architect :—

W. Shurmur	£348	J. Anley	£322

LONDON.—For new warehouse, Back Gravel-lane, Houndsditch. Mr. H. H. Waterman, architect :—

Charteris	£6,727	Patman & Fotheringham	£6,051
Ashby Bros.	6,675	Ashby & Horner	5,096
Calnan	6,381	Harris & Wardrop	5,987
Laurence & Son	6,375	W. Shurmur	5,450

LONDON.—For new warehouse at Hare Walk, Kingsland, for Messrs. Bennett & Co. Mr. W. D. Bullis, architect :—

Lawrence & Son	£2,614	Pritchard & Kenrick	£1,920
W. Shurmur	2,295		

LONDON.—For alterations, &c., at 61, Ludgate Hill, for Messrs. Straker & Co. Mr. H. Gardiner Gribble, architect. Quantities by Mr. Adam K. Ball :—

J. Rider Hunt	£707	Drew & Cadman	£551
Messrs. Sage & Co.	627	W. Shurmur	540

LONDON.—For new pavilions, chapel, dining-hall, &c., at the Workhouse, South Grove, E., for the Guardians of the Whitechapel Union. Mr. Bruce J. Capell, architect. Quantities by Mr. Max Clarke :—

W. Downs	£35,797	Perry & Co.	£34,576
Harris & Wardrop	35 422	Munday & Co.	34,255
Lawrence & Son	35,317	S. J. Jerrard	34,235
J. T. Chappell	35,235	J. Goodman	33,997
B. E. Nightingale	34,965	J. Pattison	33,873
Johnson & Co.	34,905	W. Shumur	33,781

LONDON.—For alterations, additions, decorations, and sanitary work at the Laurels, West End-lane, for Mr. H. L. Sternberg. Mr. L. Solomon, architect, 55, New Broad-street, City :—

Vernall & Griffiths	£977 0 0
E. A. Beer & Co., Islington (accepted)	927 0 0

LONDON.—For providing and fixing heating apparatus on the low-pressure hot-water system (with the necessary boiler) for the Swan-street School, Minories, for the School Board for London. Mr. T. J. Bailey, Architect :—

T. Potter & Sons	£429 0	Rosser & Russell, Ltd.	£229 0
Wilson Engineering Co. Limited	320 0	J. & F. May	222 10
W. G. Cannon	248 10	Z. D. Berry & Sons*	193 0

*Recommended by the Works Committee for acceptance.

LONDON.—For repairs to house, 124, Kennington-road. Mr. H. Stock, architect :—

J. Bullers	£435	S. Frampton	£344
Pritchard & Renwick	384	A. White & Co.	339
J. Ford	367	V. Rogers	263
A. Stephens	352		

LONDON.—For laying out the cemetery-ground, Enfield High way (Cemetery No. 2), for the Enfield Burial Board :—

J. Inwood	£864 0 0	J. Bloomfield	£596 0 0
S. Hipwell	842 0 0	W. Jenner	574 18 9
B. Cooke & Co.	750 0 0	E. J. Betts	535 0 0
J. Meston	655 4 7	Pavey	499 19 10
G. Impey	636 9 11	J. Jackson, Enfield*	425 1 7
Geo. Bell	627 0 0	M. Kitteringham	405 0 0
W. T. Williamson	599 0 0		

* Accepted.

LONDON.—For erecting a cookery centre, &c., in connexion with the Raywood-street School, Battersea, for the School Board for London. Mr. T. J. Bailey, Architect :—

B. E. Nightingale	£864	Lathey Bros.	£689
J. Shillitoe & Sons	820	Hart Bros.	689
James Smith & Sons	758	Holloway Bros.	671
J. Willmott & Sons	739	J. Tyerman	647
Treasure & Son	736	Holliday & Greenwood, Brixton*	577
F. J. Coxhead	703		
J. Marsland	695		

*Recommended by the Works Committee for acceptance.

LONDON.—For erecting new water-closets for all departments of the Sumner-road School, Peckham, and for drainage and sanitary works, for the School Board for London. Mr. T. J. Bailey, Architect :—

Lathey Bros.	£1,157	Hart Bros.	£1,063
H. Mallett	1,100	E. Triggs	1,029
Rice & Son	1,084	J. Marsland	1,025
Holloway Bros.	1,080	Holliday & Greenwood*	1,020
W. & H. Castle	1,071		

* Accepted by the Works Committee.

LONDON.—For the erection of a pair of semi-detached villa residences, Stanhope-road, Crouch End, for the executors of the late Mr. Charles Turner. Mr. Percy B. Tubbs, architect :—

Faulkner	£1,987	Ellis & Turner	£1,780
Nightingale	1,585	E. Houghton & Son	1,746
Langham	1,954	Peak	1,695
Lawrence & Son	1,891		

LONDON.—For buillding show room and workshop at 174, Upper-street, Islington, for Messrs. Lupton Bros. Mr. E. J. Harrison, architect :—

Cole	£384	Coombes	£343
E. Houghton & Son	377		

LONDON.—For the erection of a boundary-wall at the Infirmary Archway-road, N., for the Guardians of the Holborn Union. Mr. H. Saxon Snell, architect, 22, Southampton-buildings, Chancery-lane, W.C. :—

Dove Bros.	£2,055	Flew & Co.	£1,968
J. W. Woodhall	2,047	H. Wall & Co., Carlton Works, Kentish Town*	1,858
E. Toms	1,996	H. Knight & Sons	1,853
W. Bamford	1,975		

* Accepted.

LONDON.—For pulling-down and rebuilding Nos. 32, 34, 36, 38, and 40, Baker's-row, Whitechapel, for the Society of Friends. Messrs. Edward Saunders & Son, architects. Quantities supplied by Mr. W. C. Phillips :—

Wire & Forest	£2,880	Jerrard	£2,573
Woodward & Co.	2,759	Roome	2,525
Cox	2,720	J. O. Richardson	2,479
Battley, Son, & Holness	2,644	Garrett & Son	2,390

LONDON.—For erecting new mortuary, coroner's court, and disinfecting station, at No. 67, Horseferry-road, Westminster, for the Vestry of St. Margaret and St. John, Westminster. Mr. G. R. W. Wheeler, Surveyor. Quanties supplied by Mr. Walter H. Hewish :—

Williams & Richards	£6,650	Mowlem & Co.	£6,145
Smith & Sons	6,487	Lorden & Sons	6,085
Neave	6,449	Wallis	5,947
Hoskins & Wiltshire	6,405	Lidstone	5,860
Holloway Bros.	6,387	Allen & Sons	5,750
Holliday & Greenwood	6,222	Richardson	5,718
Brickell	6,190		

PETWORTH (Sussex).—For alterations to the workhouse, for the Union Guardians. Mr. H. Howard, architect, Littlehampton :—

T. M. Marshall	£998	Cook & Son, Crawley*	£799
P. Peters	850		

* Accepted.

PONTYPOOL.—For the erection of new banking premises, Commercial-street, for the London and Provincial Bank, Limited. Messrs. Seward & Thomas, architects, Queen's Chambers, Cardiff. Quantities by the architects :—

Burgoyne	£3,592	W. Jones & Son	£2,747
J. D. Williams	3,295	Claridge & Bloxham	2,738
H. Welsh	3,000	Henry Parfitt	2,700
Stephens, Bastow & Co.	2,897	S. Shepton & Son	2,670
D. Jones	2,884	W. Lewis	2,650
Hatherly & Carr	2,797	John Linton	2,600
Lissiman	2,788	Morgan & Evans, Pontypool (accepted)	2,517
G. Rutter	2,743		

PONTYPRIDD.—For the erection of public abattoirs, for the Local Board. Mr. Edward Rees, Surveyor, Local Board Offices, Pontypridd. Quantities by the Surveyor :—

William Davis	£7,987 4 0	R. Mathias	£6,315 14 6
Howell Powell	7,167 11 8	Watkin Williams	5,800 0 0
M. Julian	7,014 0 0	Williams & James	5,596 0 0
David Jones	6,685 14 0	Wm. Thomas & Co.	5,436 15 5
D. C. Jones	6,538 8 8	James Allan, Park-place, Cardiff*	5,434 9 6
C. Gardner	6,329 0 0		

*Accepted.

RUSHBROOK (Co. Cork).—Accepted for the erection of a villa residence (exclusive of plumbing and drainage). Mr. Jas. F. M'Mullen, architect, 38, South Mall, Cork :—

Denis Creedon, Fermoy, Co. Cork	£1,200 0 0

RUSHDEN (Northamptonshire).—For the improvement of High street and Newton-road, for the Local Board. Mr. Wm. Pare-Surveyor, Local Board Offices, Rushden :—

High-street.

C. Bayes & Son	£265 0	Thomas Wilmott, Rushden (accepted)	£239 10
Robert Marriott	245 0		

Newton-road.

Wm. Wilmott, Rushden*	£376 0	Robt. Marriott (too late)	£370 0

*Accepted.

SILLOTH (Cumberland).—For the erection of a house, Skinburness, for Mr. Jno. Glaister. Mr. G. Armstrong, architect, 45, Lowther-street, Carlisle :—

For the whole.—T. Longcake	£697 13 6
Mason and Bricklayer.—L. Ferguson, Workington (accepted)	230 0 0
Carpenter and Joiner.—J. R. Thompson, Silloth (accepted)	169 0 0

TOTTENHAM.—For making-up Park, Winchelsea, Seaford, and Foster roads, for the Local Board. Mr. J. E. Worth, Engineer, Coombes Croft House, High-road, Tottenham :—

	Park-road. £ s. d.	Seaford-road. £ s. d.	Winchelsea-road. £ s. d.	Forster-road. £ s. d.
W. T. Williamson	1,020 8 9	—	—	—
J. Neave	1,019 6 0	3,930 0 0	2,382 0 0	1,187 0 0
Percival Hart, Tottenham	1,018 0 0	—	—	890 10 0*
Wm. Griffiths	894 0 0	3,389 0 0	1,986 0 0	988 0 6
Thos. Adams	893 13 6	3,515 9 5	2,117 4 1	1,055 10 8
A. T. Catley	891 0 0	3,530 0 0	2,113 0 0	898 14 6
J. Mowlem & Co.	883 0 6	3,367 0 0	2,002 0 0	1,038 0 0
J. E. Bloomfield, Tottenham	873 6 4	3,267 6 6*	1,925 0 0	957 17 1
Thomas Rowley, Tottenham	736 5 8*	—	—	—
William Pavey, Winchmore Hill	—	—	1,804 11 4*	965 9 0
Sidney Hudson	—	—	1,965 11 3	—

*Accepted.

WARWICK.—For the erection of a workshop, Westgate Board School, for the School Board. Mr. F. H. Moore, architect, 2, Northgate-street, Warwick :—

R. Bowen	£312 10	T. Bailey	£295 15
F. Eyres	300 0	J. H. & T. Cashmore, Warwick (accepted)	260 0
J. Chaplin & Sons	299 0		

WHITEHAVEN (Cumberland).—Accepted for alterations at the Oddfellow' Hall. Messrs. Moffat & Bentley, architects, Whitehaven :—

Chapple & Son, Moor-row*	£241 10 0
John Brown, Scotch-street, Whitehaven†	85 0 0

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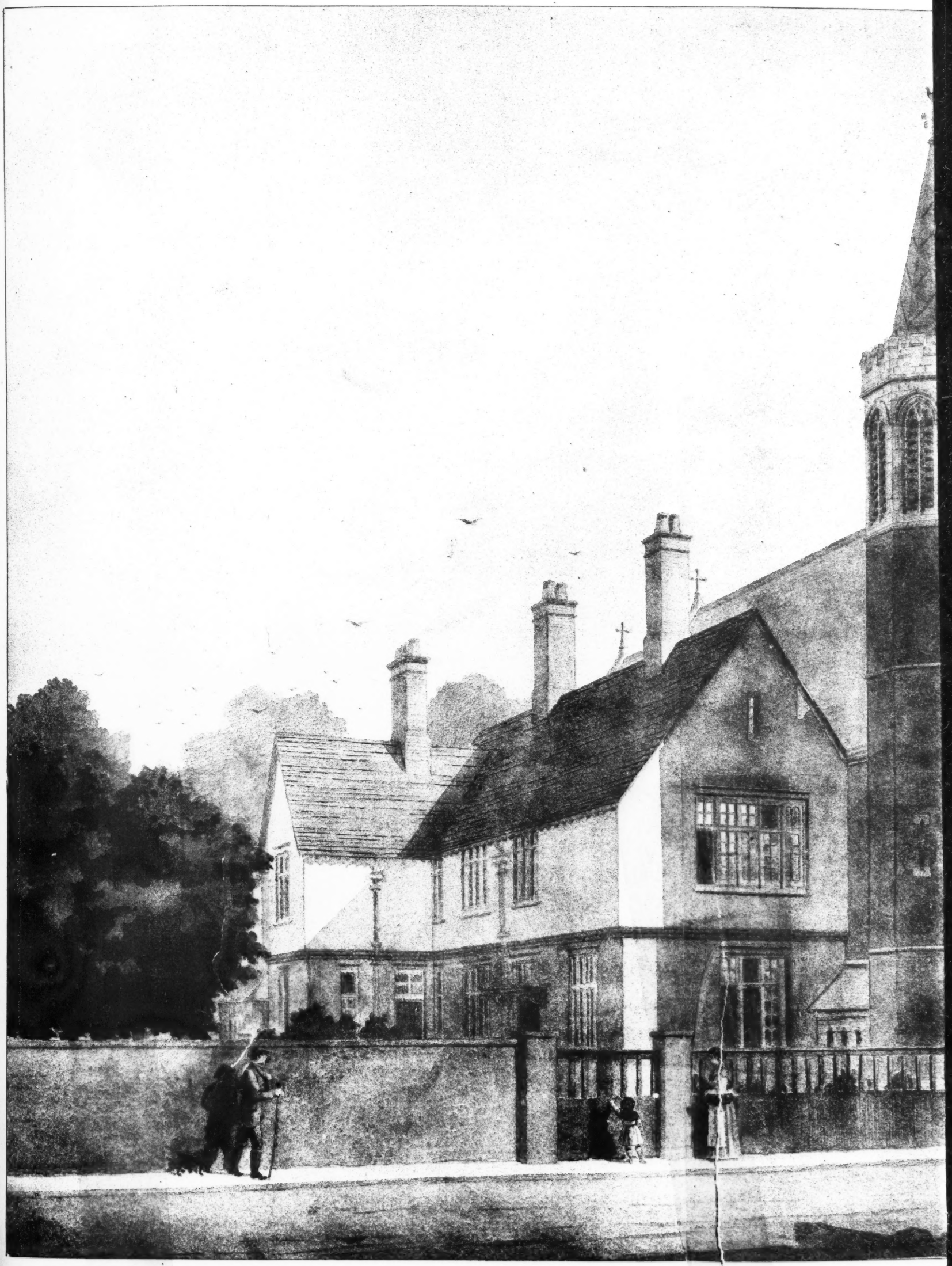

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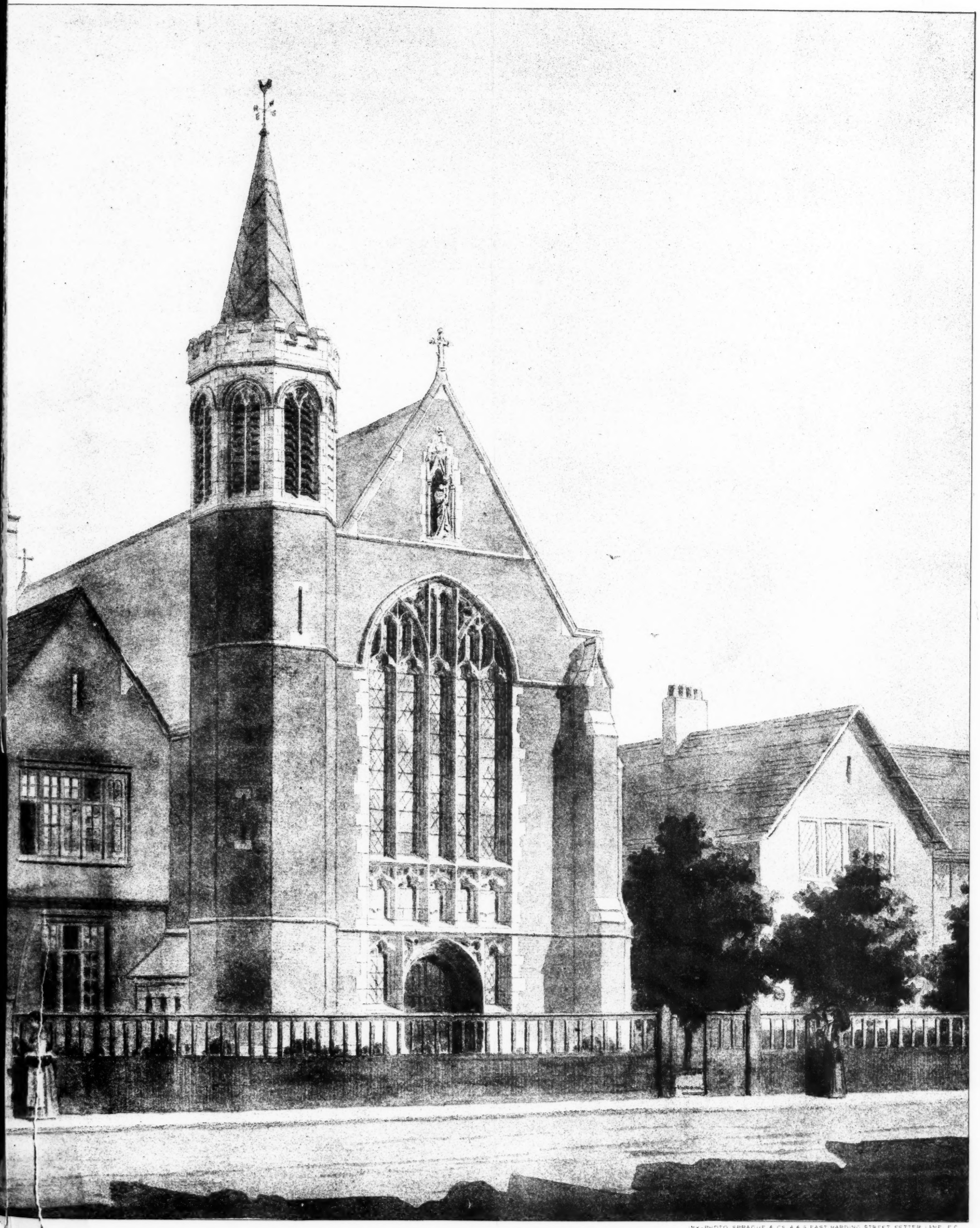

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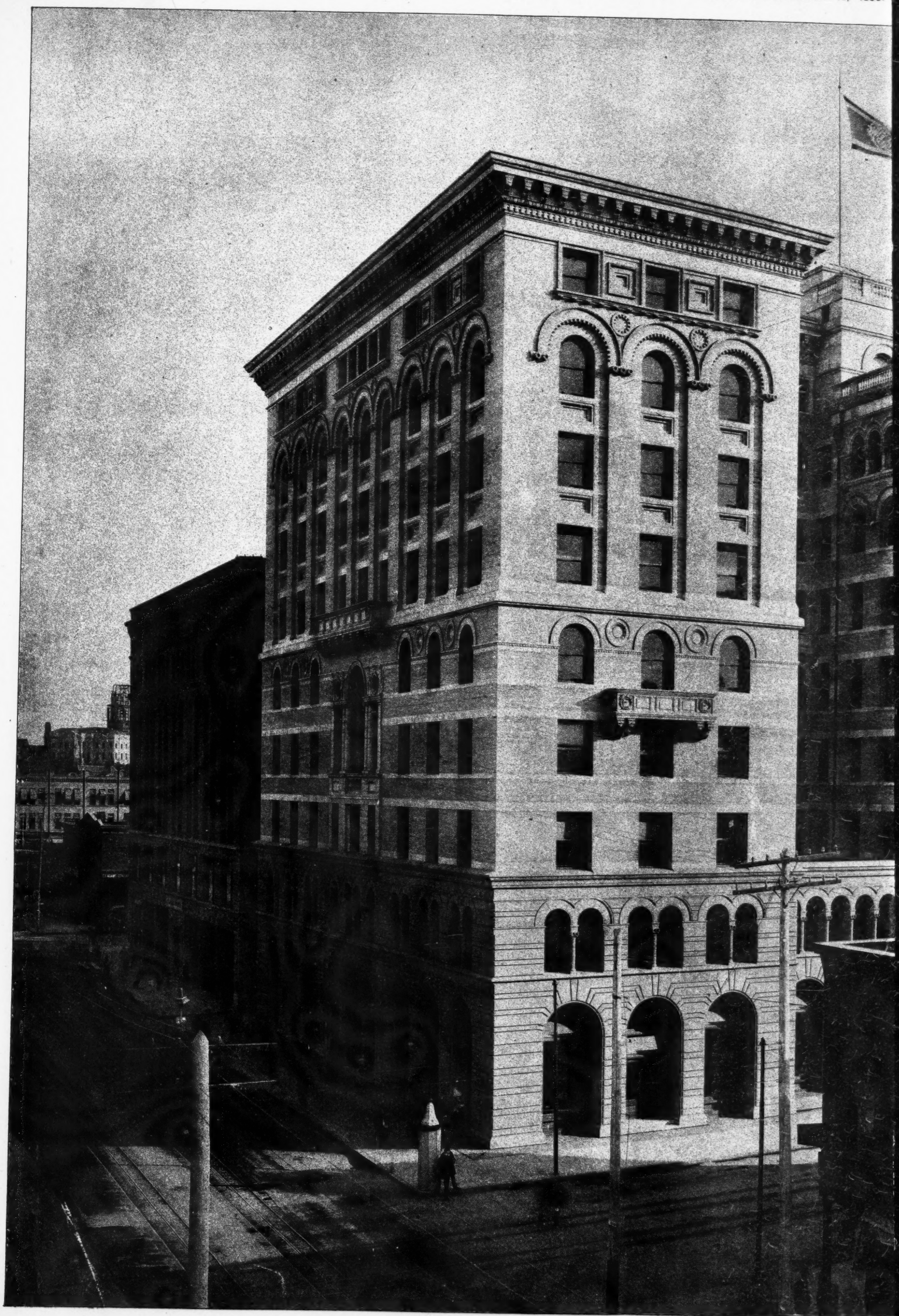

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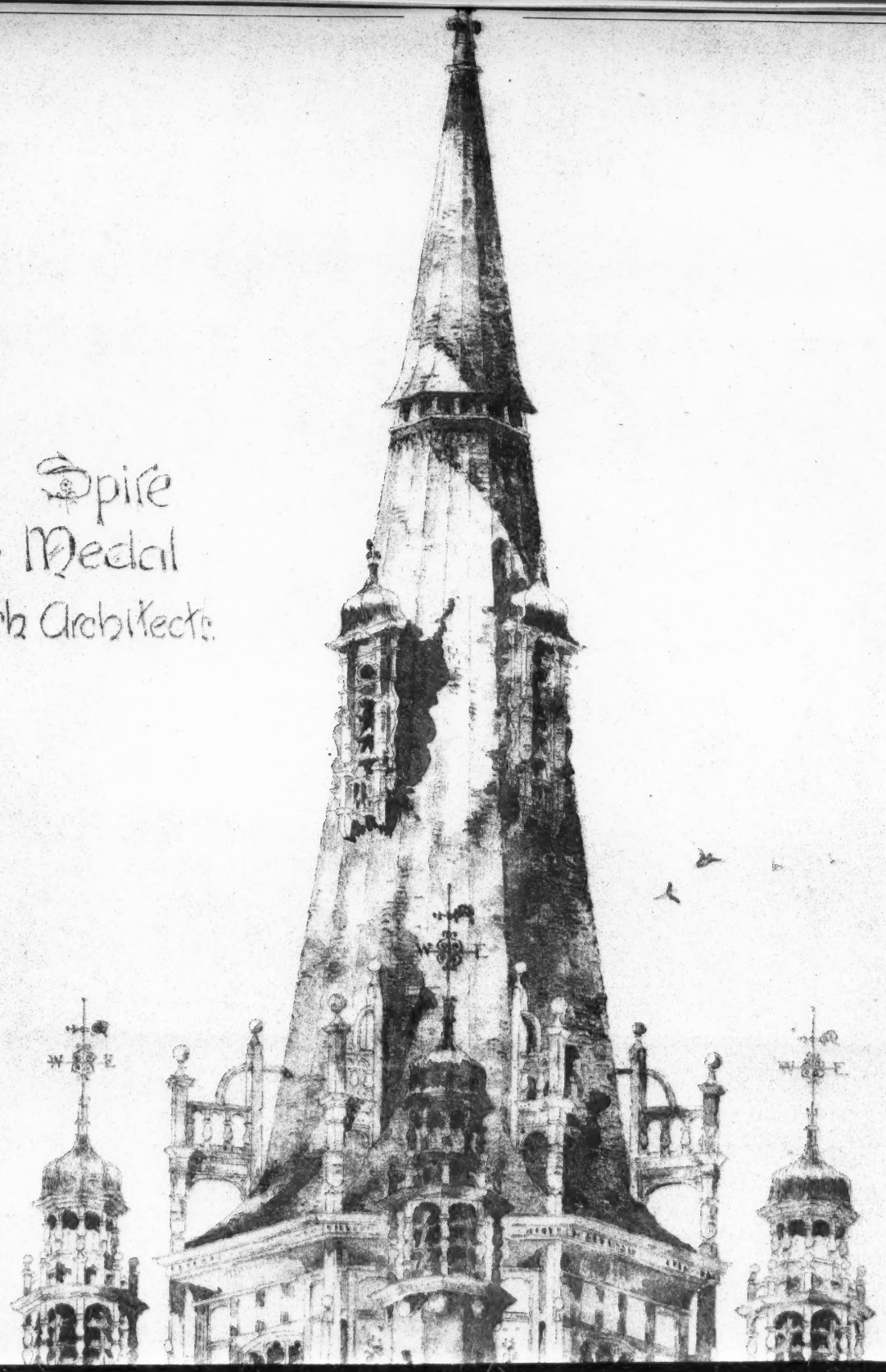

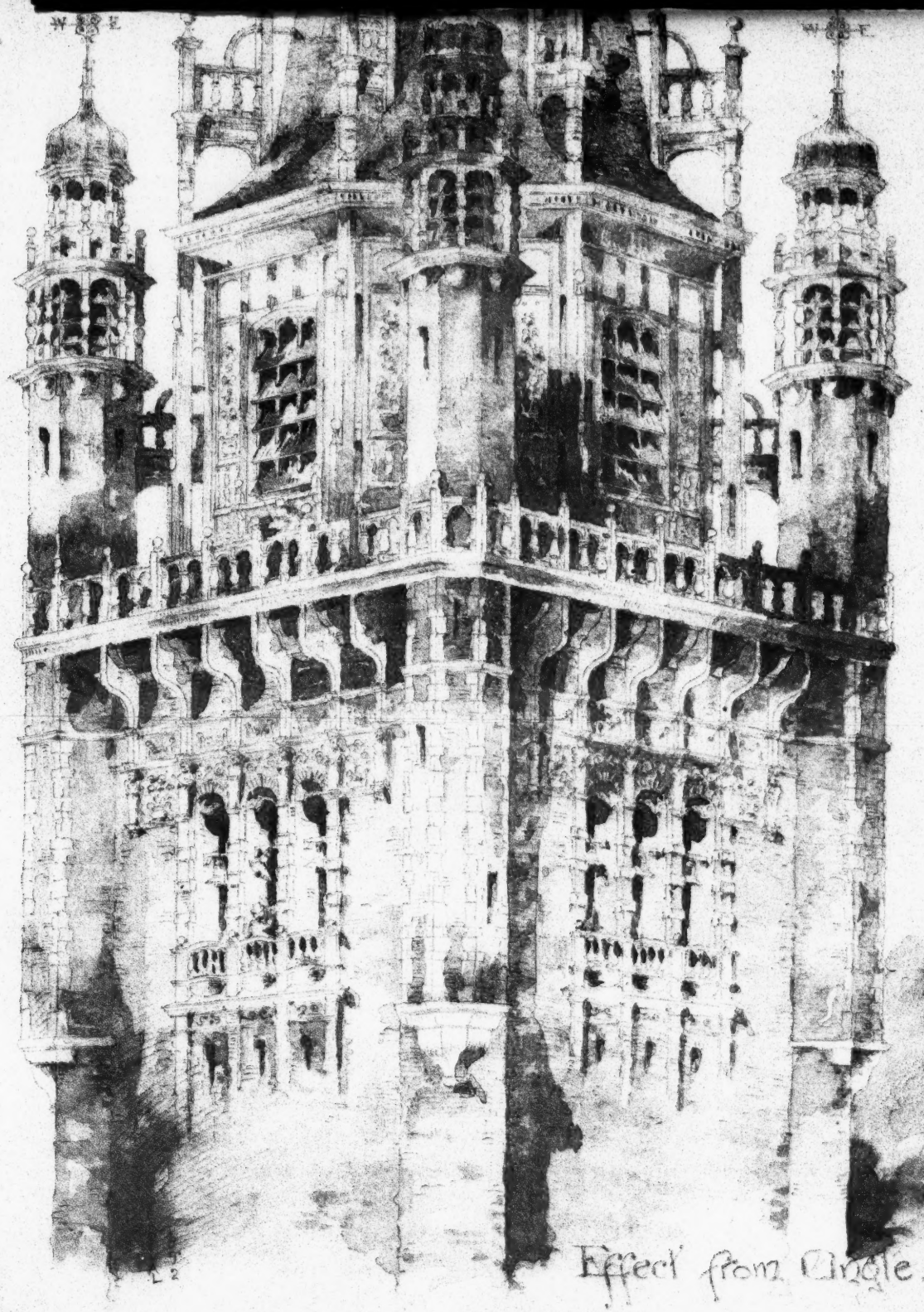

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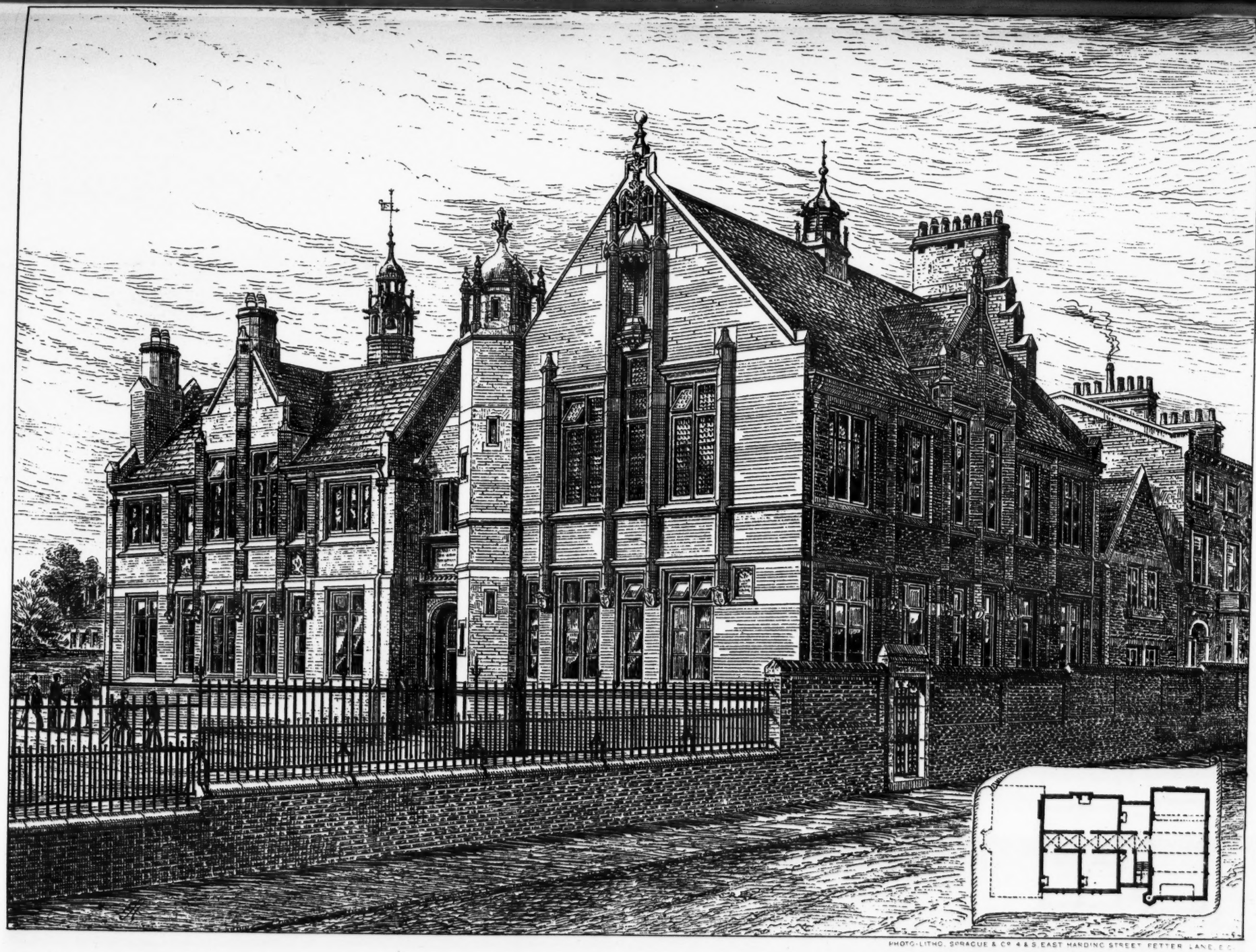

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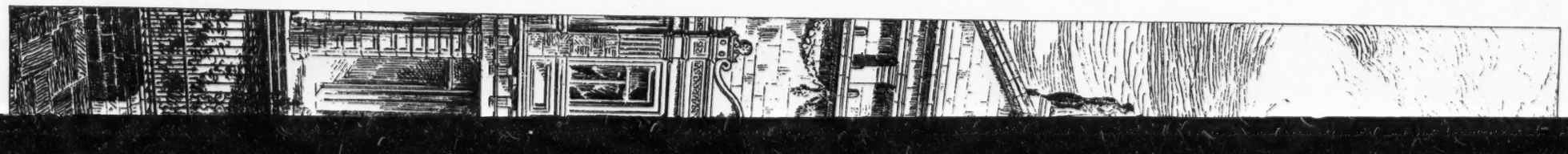

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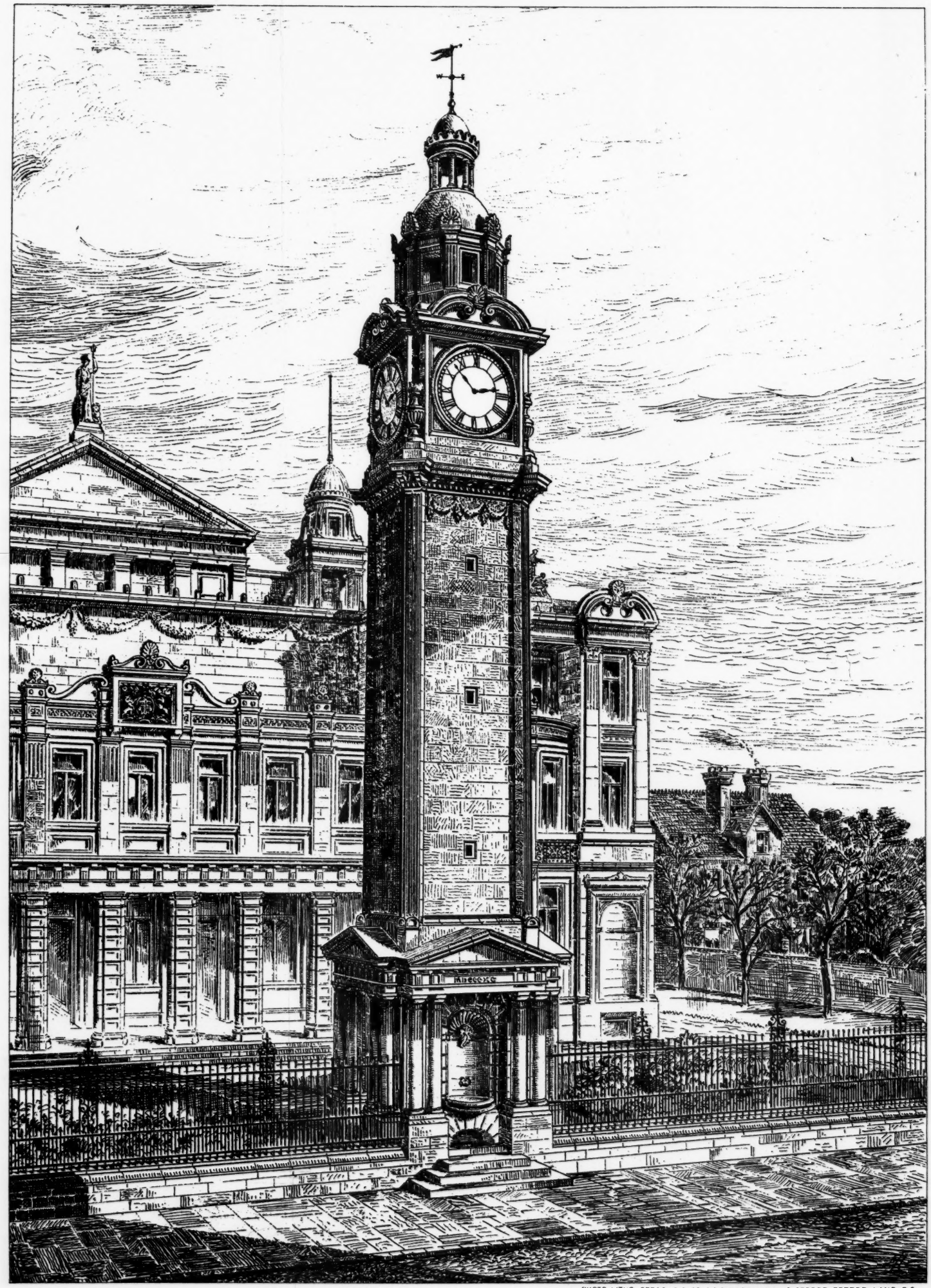

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